Customer Engineering Service

olivetti MC24, MC26, MC20, MC23 fault-repair guide

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OAC–1–RG

INTRODUCTION

This Fault-Repair Guide (FRG) is used in conjunction with the Fault-Finding Guide (FFG) for troubleshooting the following machines:

MC24 - Electrosumma Duplex
 - Multisumma
 - Divisumma
 - Multisumma GT
 - Divisumma GT
 - Tetractys

MC26 - Divisumma
 - Multisumma GT
 - Divisumma GT

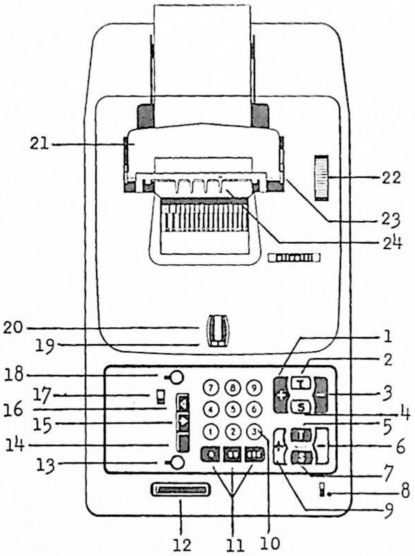
MC20 - Summa Prima
 - Quanta
 - Electrosumma
 - Multisumma

MC23 - Electrosumma

Refer to the introduction of the Fault-Finding Guide for instructions on how to use these guides.

The main features and characteristics of the MC24, MC26, MC20, and MC23 are shown on pages 1 through 14 of this guide.

MC24 - ELECTROSUMMA DUPLEX

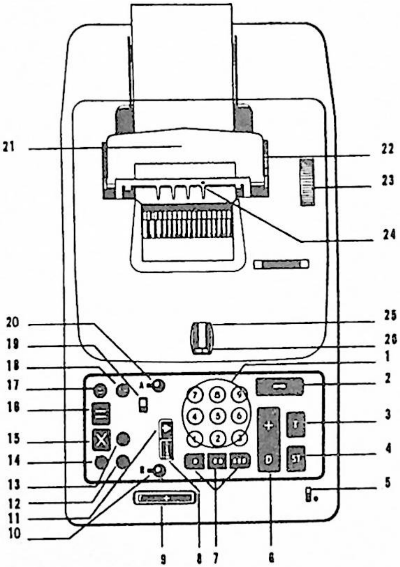


1. ADDITION KEY FOR BLACK REGISTER
2. TOTAL KEY FOR BLUE REGISTER
3. SUBTRACTION KEY FOR BLACK REGISTER
4. SUBTOTAL KEY FOR BLUE RGISTER
5. TOTAL KEY FOR BLACK REGISTER
6. SUBTRACTION KEY FOR BLUE REGISTER
7. SUBTOTAL KEY FOR BLACK REGISTER
8. AUTOMATIC TRANSFER LEVER
9. ADDITION KEY FOR BLUE REGISTER
10. NUMERIC KEYBOARD
11. SINGLE, DOUBLE AND TRIPLE ZERO KEYS
12. THUMB ADD BAR
13. REPEAT LEVER
14. KEYBOARD CLEARING KEY
15. BACKSPACE KEY
16. NON ADD KEY
17. DATE KEY
18. NON PRINT KEY
19. CREDIT BALANCE SIGNALS
20. COLUMN INDICATOR
21. PAPER TABLE
22. PLATEN KNOB
23. PAPER RELEASE LEVER
24. DECIMAL INDICATORS

CHARACTERISTICS

- Electric printing adding machine equipped with two registers, operating at about 250 cycles per minute
- Credit balance mechanism on both registers
- Listing capacity: 12 digits
- Total capacity: 13 digits
- Column indicator
- Credit balance indicator for both registers
- Paper rolls 80 to 90 mm wide can be installed

MC24 - MULTISUMMA



1. NUMERIC KEYBOARD
2. SUBTRACTION KEY
3. TOTAL KEY
4. SUBTOTAL KEY
5. AUTOMATIC SUBTOTAL LEVER
6. ADDITION KEY
7. SINGLE, DOUBLE AND TRIPLE ZERO KEYS
8. KEYBOARD CLEARING KEY
9. THUMB ADD BAR
10. REPEAT LEVER
11. BACKSPACE KEY
12. MEMORY READING AND OUTPUT KEY
13. MEMORY INPUT KEY
14. NON ADD KEY
15. MULTIPLIER AND CONSTANT ENTRY KEY
16. MULTIPLICATION KEY
17. NEGATIVE MULTIPLICATION KEY
18. AUTOMATIC PRODUCT RE-ENTRY KEY
19. DATE KEY
20. AUTOMATIC TOTAL LEVER
21. PAPER TABLE
22. PAPER RELEASE LEVER
23. PLATEN KNOB
24. DECIMAL INDICATORS
25. COLUMN INDICATOR
26. CREDIT BALANCE SIGNAL

CHARACTERISTICS

- Electric printing calculator equipped with one register and one memory. Operational speed about 245 cycles per minute

- The register is equipped with credit balance

- The register performs additions, subtractions and multiplications

The memory (which is automatic) stores the multiplier

- Listing capacity: 12 digits

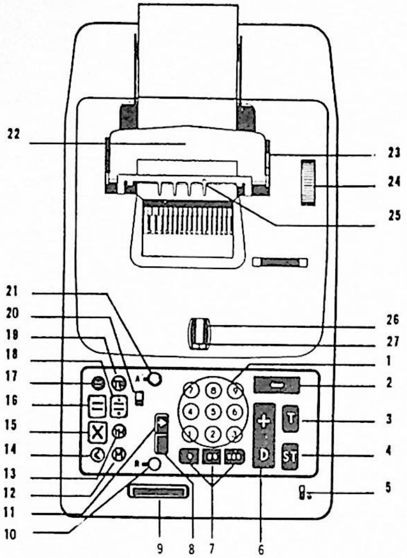
- Total capacity: 13 digits

- Column indicator

- Credit balance indicator

- Paper rolls 80 to 90 mm wide may be installed

MC24 - DIVISUMMA



1. NUMERIC KEYBOARD
2. SUBTRACTION KEY
3. TOTAL KEY
4. SUBTOTAL KEY
5. AUTOMATIC SUB-TOTAL LEVER
6. ADDITION AND DIVIDEND ENTRY KEY
7. SINGLE, DOUBLE AND TRIPLE ZERO KEYS
8. KEYBOARD CLEARING KEY
9. THUMB ADD BAR
10. REPEAT LEVER
11. BACKSPACE KEY
12. MEMORY READING AND OUTPUT KEY
13. MEMORY INPUT KEY
14. NON ADD KEY
15. MULTIPLIER AND CONSTANT ENTRY KEY
16. MULTIPLICATION KEY
17. NEGATIVE MULTIPLICATION KEY
18. DIVISION KEY
19. AUTOMATIC PRODUCT RE-ENTRY KEY
20. DATE KEY
21. AUTOMATIC TOTAL LEVER
22. PAPER TABLE
23. PAPER RELEASE LEVER
24. PLATEN KNOB
25. DECIMAL INDICATORS
26. COLUMN INDICATOR
27. CREDIT BALANCE SIGNAL

CHARACTERISTICS

- Electric printing calculator equipped with one register and one memory. Operating speed about 245 cycles per minute

- The register is equipped with credit balance

- The register performs four operations; addition, subtraction, multiplication, division

The memory (automatic) stores the multipliers and quotients

- Listing capacity: 12 digits

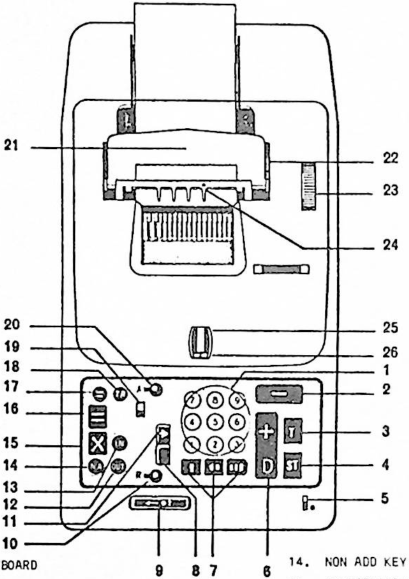
- Total capacity: 13 digits

- Column indicator

- Credit balance indicator

- Paper rolls from 80 to 90 mm wide may be installed

MC24 - MULTISUMMA GT



1. NUMERIC KEYBOARD
2. SUBTRACTION KEY
3. TOTAL KEY
4. SUBTOTAL KEY
5. AUTOMATIC ACCUMULATION LEVER
6. ADDITION KEY
7. ZERO KEYS
8. CLEAR KEY
9. GRAND TOTAL LEVER
10. REPEAT LEVER
11. BACKSPACE KEY
12. MEMORY READING AND OUTPUT KEY
13. MEMORY INPUT KEY
14. NON ADD KEY
15. MULTIPLIER AND CONSTANT ENTRY KEY
16. MULTIPLICATION KEY
17. NEGATIVE MULTIPLICATION KEY
18. AUTOMATIC PRODUCT RE-ENTRY KEY
19. DATE KEY
20. AUTOMATIC TOTAL PRINTING LEVER
21. PAPER TABLE
22. PAPER RELEASE LEVER
23. PLATEN KNOB
24. DECIMAL POINT AND THOUSANDS MARKER
25. COLUMN INDICATOR
26. CREDIT BALANCE SIGNAL

CHARACTERISTICS

- Electric printing calculator equipped with two registers and a memory. Operational speed about 245 cycles per minute

- Both registers equipped with credit balance

- The 1st register calculates the three operations; addition, subtraction, multiplication

- The 2nd register algebraically accumulates the results obtained in the 1st register

The memory (automatic) stores the multiplier

- Listing capacity: 12 digits

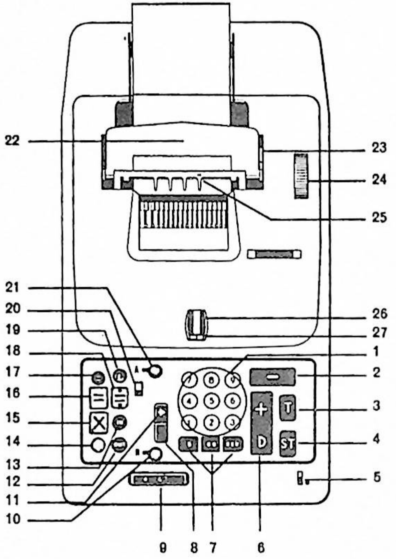
- Total capacity: 13 digits

- Column indicator

- Credit balance indicator for both registers

- Paper rolls from 80 to 90 mm wide may be installed

MC24 - DIVISUMMA GT



1. NUMERIC KEYBOARD
2. SUBTRACTION KEY
3. TOTAL KEY
4. SUBTOTAL KEY
5. AUTOMATIC ACCUMULATION LEVER
6. ADDITION AND DIVIDEND ENTRY KEY
7. SINGLE, DOUBLE AND TRIPLE ZERO KEYS
8. KEYBOARD CLEARING KEY
9. GRAND TOTAL LEVER
10. REPEAT LEVER
11. BACKSPACE KEY
12. MEMORY READING AND OUTPUT KEY
13. MEMORY INPUT KEY
14. NON ADD KEY
15. MULTIPLIER AND CONSTANT ENTRY KEY
16. MULTIPLICATION KEY
17. NEGATIVE MULTIPLICATION KEY
18. DIVISION KEY
19. AUTOMATIC PRODUCT RE-ENTRY KEY
20. DATE KEY
21. ATUOMATIC TOTAL LEVER
22. PAPER TABLE
23. PAPER RELEASE LEVER
24. PLATEN KNOB
25. DECIMAL POINT AND THOUSANDS MARKER
26. COLUMN INDICATOR
27. CREDIT BALANCE SIGNALS

CHARACTERISTICS

- Electric printing calculator, equipped with two registers and a memory. Operational speed about 245 cycles per minute

- Both registers equipped with credit balance

- The 1st register calculates four operations; addition, subtraction, multiplication, division
- The 2nd register accumulates the results obtained by the 1st register

The memory (automatic) stores the multiplier and quotients

- Listing capacity: 12 digits

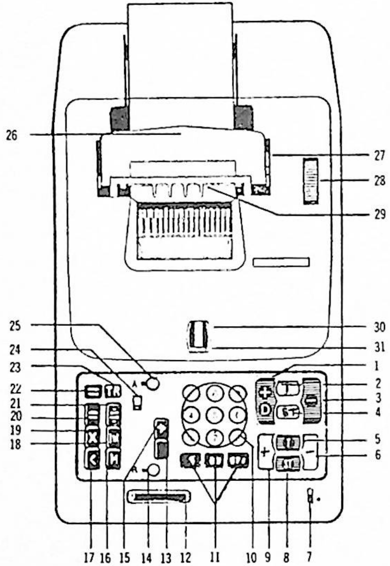
- Total capacity: 13 digits

- Column indicator

- Credit balance indicators for both registers

- Paper rolls from 80 to 90 mm wide may be installed

MC24 - TETRACTYS



1. BLACK ADDITION AND DIVIDEND ENTRY KEY
2. GREEN TOTAL KEY
3. BLACK SUBTRACTION KEY
4. GREEN SUBTOTAL KEY
5. BLACK TOTAL KEY
6. GREEN SUBTRACTION KEY
7. AUTOMATIC ACCUMULATION LEVER
8. BLACK SUBTOTAL KEY
9. GREEN ADDITION KEY
10. NUMERIC KEYBOARD
11. SINGLE, DOUBLE AND TRIPLE CIPHER KEYS
12. THUMB ADD BAR
13. KEYBOARD CLEARING KEY
14. REPEAT LEVER
15. BACKSPACE KEY
16. MEMORY READING AND OUTPUT KEY
17. NON ADD KEY
18. MEMORY INPUT KEY
19. MULTIPLIER AND CONSTANT ENTRY KEY
20. MULTIPLICATION KEY
21. DIVISION KEY
22. NEGATIVE MULTIPLICATION KEY
23. AUTOMATIC PRODUCT RE-ENTRY KEY
24. DATE KEY
25. AUTOMATIC TOTAL LEVER
26. PAPER TABLE
27. PAPER RELEASE LEVER
28. PLATEN KNOB
29. DECIMAL INDICATORS
30. COLUMN INDICATOR
31. CREDIT BALANCE SIGNALS

CHARACTERISTICS

- Electric printing calculator equipped with two registers and a memory. Operational speed about 245 cycles per minute

- Each register has credit balance

- The 1st register performs four operations; addition, subtraction, multiplication, division
- The 2nd register makes additions, subtractions, accumulates algebraic results elaborated by the 1st register

The automatic memory stores the multiplier and quotient

- Listing capacity: 12 digits

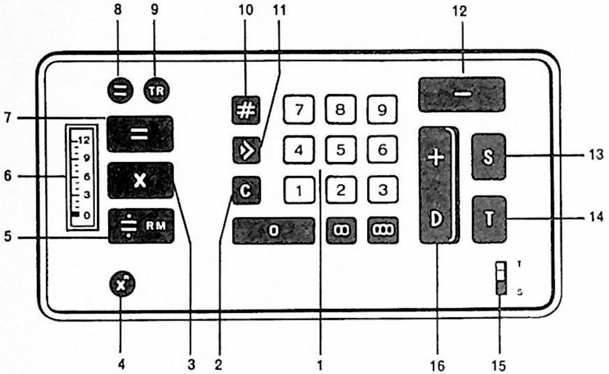
- Total capacity: 13 digits

- Column indicator

- Credit balance indicator for both registers

- Paper rolls from 80 to 90 mm wide may be installed

MC26 - DIVISUMMA



1. NUMERIC KEYBOARD
2. CLEAR KEY
3. MULTIPLIER KEY
4. SQUARING KEY AND "STOP" IN DIVISION
5. DIVISION EQUALS AND RECALL MEMORY KEY
6. COLUMN INDICATOR
7. MULTIPLICATION EQUALS KEY
8. NEGATIVE MULTIPLICATION EQUALS KEY
9. AUTOMATIC PRODUCT RE-ENTRY KEY
10. "NON ADD"KEY
11. BACKSPACE KEY
12. SUBTRACTION BAR
13. SUBTOTAL KEY
14. TOTAL KEY
15. AUTOMATIC TOTAL OR SUBTOTAL LEVER
16. ADDITION AND DIVIDEND ENTRY BAR

CHARACTERISTICS

- Electric printing calculator equipped with one register and two memories. Operational speed about 255 cycles per minute

- The register has credit balance and performs four operations; addition, subtraction, multiplication, division

The 1st memory (automatic) stores the multiplier and quotient

The 2nd memory (active) stores the last number printed. This number can be recalled for chain operations and repeat

- Listing capacity: 12 digits

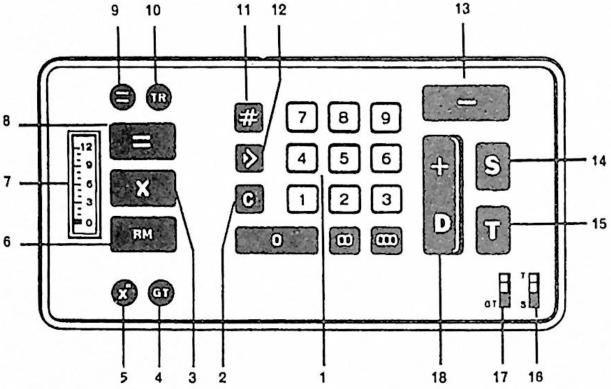
- Total capacity: 13 digits

- Column indicator

- Credit balance indicator

- Paper rolls from 80 to 90 mm may be installed

MC26 - MULTISUMMA GT



1. NUMERIC KEYBOARD
2. KEYBOARD CLEAR KEY
3. MULTIPLIER KEY
4. GT (ACCUMULATING REGISTER) KEY
5. SQUARING KEY
6. RECALL FROM AUTOMATIC MEMORY
7. COLUMN INDICATOR
8. MULTIPLICATION EQUALS KEY
9. NEGATIVE MULTIPLICATION EQUALS KEY
10. AUTOMATIC PRODUCT RE-ENTRY KEY
11. NON ADD KEY
12. BACK SPACE KEY
13. SUBTRACTION BAR
14. SUBTOTAL KEY
15. TOTAL KEY
16. AUTOMATIC TOTAL-SUBTOTAL LEVER
17. AUTOMATIC ACCUMULATION LEVER
18. ADD BAR

CHARACTERISTICS

- Electric printing calculator equipped with two registers and two memories. Operational speed about 255 cycles per minute

- Both registers have credit balance

- The 1st register calculates additions, subtractions and multiplications

- The 2nd register calculates additions and subtractions and accumulates the algebraic results elaborated by the 1st register

The 1st memory (automatic) stores the multipliers

The 2nd memory (active) retains the last number printed. This number can be recalled for chain operations and repeat

- Listing capacity: 12 digits

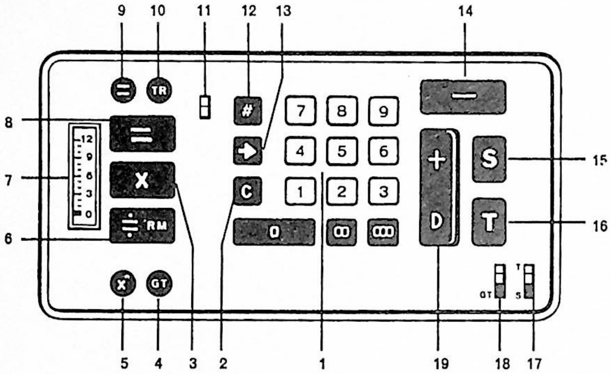
- Total capacity: 13 digits

- Column indicator

- Credit balance indicator for both registers

- Paper rolls from 80 to 90 mm may be installed

MC26 - DIVISUMMA GT



1. NUMERIC KEYBOARD
2. KEYBOARD CLEAR KEY
3. MULTIPLIER KEY
4. GT (ACCUMULATING REGISTER) KEY
5. SQUARING KEY (DIVISION STOP)
6. DIVISION EQUALS KEY (RECALL FROM AUTOMATIC MEMORY)
7. COLUMN INDICATOR
8. MULTIPLICATION EQUALS KEY
9. NEGATIVE PRODUCT RE-ENTRY KEY
10. AUTOMATIC PRODUCT RE-ENTRY KEY
11. DATE KEY
12. NON ADD KEY
13. BACK SPACE KEY
14. SUBTRACTION BAR
15. SUBTOTAL KEY
16. TOTAL KEY
17. AUTOMATIC TOTAL-SUBTOTAL LEVER
18. AUTOMATIC ACCUMULATION LEVER
19. ADD BAR (DIVIDEND ENTRY)

CHARACTERISTICS

- Electric printing calculator equipped with two registers and two memories. Operational speed about 255 cycles per minute

- Both registers have credit balance

- The 1st register calculates the four operations

- The 2nd register calculates addition and subtraction and accumulates the algebraic results elaborated by the 1st register

The 1st memory (automatic) stores the multiplier and quotient

The 2nd memory (active) stores the last number printed. This number can be recalled for chain operations and repeat

- Listing capacity: 12 digits

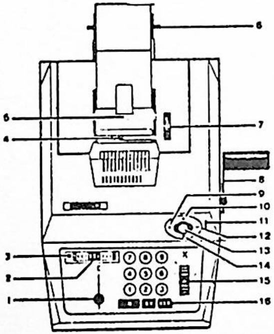
- Total capacity: 13 digits

- Column indicator

- Credit balance indicator for both registers

- Paper rolls from 80 to 90 mm may be installed

MC20 - SUMMA PRIMA

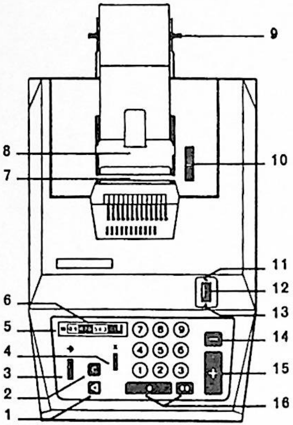


1. CORRECTION LEVER
2. COLUMN INDICATOR
3. CREDIT BALANCE SIGNAL
4. PAPER CUTTER
5. PAPER TABLE
6. PAPER RELEASE ARM
7. PLATEN KNOB
8. OPERATING HANDLE
9. NON ADD
10. TOTAL
11. SUBTRACTION REPEAT LEVER
12. SUBTRACTION
13. FOUR-POSITION CONTROL SWITCH
14. SUBTOTAL
15. REPEAT LEVER
16. SINGLE, DOUBLE AND TRIPLE ZERO KEYS

CHARACTERISTICS

- Hand operated, printing adder, equipped with one register
- The register has credit balance
- Listing capacity: 10 digits
- Total capacity: 11 digits
- Column indicator
- Credit balance indicator
- Paper rolls 60 mm wide may be installed

MC20 - QUANTA



1. NON ADD KEY
2. CORRECTION KEY
3. BACKSPACE LEVER
4. REPEAT LEVER
5. CREDIT BALANCE INDICATOR
6. COLUMN INDICATOR
7. PAPER CUTTER
8. PAPER TABLE
9. PAPER RELEASE ARM
10. PLATEN KNOB
11. SUBTOTAL POSITION
12. TOTAL LEVER
13. TOTAL POSITION
14. SUBTRACTION KEY
15. ADDITION KEY
16. SINGLE AND DOUBLE CIPHER KEYS

CHARACTERISTICS

- Electric printing adder equipped with one register. Operational speed about 210 cycles per minute

- The register has credit balance

- Listing capacity: 10 digits

- Total capacity: 11 digits

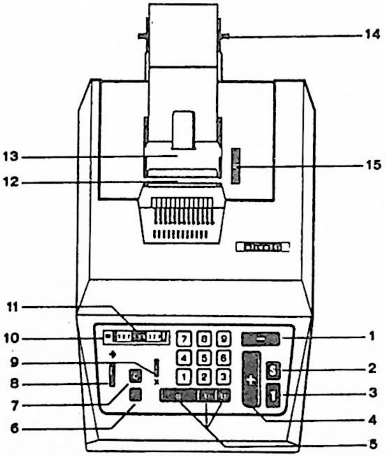
- Column indicator

- Credit balance indicator

- Paper rolls 60 mm wide are used

MC20 - ELECTROSUMMA

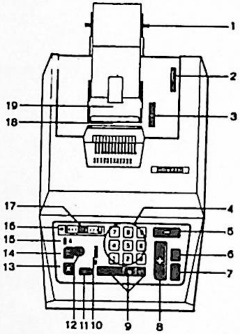
1. SUBTRACTION KEY
2. SUBTOTAL KEY
3. TOTAL KEY
4. ADDITION KEY
5. SINGLE AND DOUBLE ZERO KEYS
6. NON ADD KEY
7. CORRECTION KEY
8. BACKSPACE LEVER
9. REPEAT LEVER
10. CREDIT BALANCE INDICATOR
11. COLUMN INDICATOR
12. PAPER CUTTER
13. PAPER TABLE
14. PAPER RELEASE ARM
15. PLATEN KNOB



CHARACTERISTICS

- Electric printing calculator equipped with one register. Operational speed about 210 cycles per minute
- The register has credit balance
- Listing capacity: 10 digits
- Total capacity: 11 digits
- Column indicator
- Credit balance indicator
- Paper rolls 60 mm wide may be installed

MC20 - MULTISUMMA



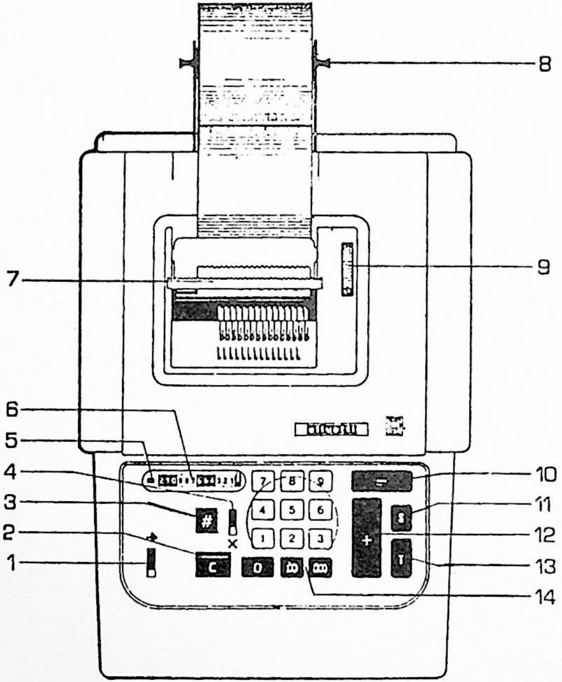
1. PAPER RELEASE LEVER
2. "NON ADD" LEVER
3. PLATEN KNOB
4. NUMERIC KEYBOARD
5. SUBTRACTION KEY
6. SUBTOTAL KEY
7. TOTAL KEY
8. ADDITION KEY
9. ZERO KEYS
10. REPEAT LEVER
11. KEYBOARD CLEARING KEY
12. NEGATIVE MULTIPLICATION KEY
13. MULTIPLIER ENTRY KEY
14. MULTIPLICATION ENTRY KEY
15. AUTOMATIC TOTAL LEVER
16. CREDIT BALANCE SIGNAL
17. COLUMN ENTRY INDICATOR
18. PAPER CUTTER
19. PAPER TABLE

CHARACTERISTICS

- Electric printing adder, equipped with one register. Operational speed about 215 cycles per minute
- The register has credit balance
- Listing capacity: 10 digits
- Total capacity: 11 digits
- Column indicator
- Credit balance indicator
- Paper roll 60 mm wide may be installed

(There is also a MC20/Multisumma which has automatic reentry of the total into memory)

MC23 - ELECTROSUMMA



CHARACTERISTICS

- Electric printing adder equipped with one register. Operational speed about 215 cycles per minute
- The register has credit balance
- Listing capacity: 12 digits
- Total capacity: 13 digits
- Column indicator
- Credit balance indicator
- Paper rolls from 80 to 90 mm wide may be used

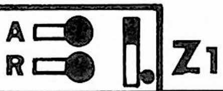
1. BACKSPACER
2. CLEAR KEY
3. NON ADD KEY
4. REPEAT LEVER
5. CREDIT BALANCE INDICATOR
6. COLUMN INDICATOR
7. PAPER CUTTER
8. PAPER RELEASE
9. PLATEN KNOB
10. SUBTRACT BAR
11. SUBTOTAL KEY
12. ADD BAR
13. TOTAL KEY
14. NUMERIC KEYBOARD

TESTS Z

MC 24

Manual operation

Presetting



Step	Enter	Operation
1	Clear register	T
2	2	−
3	1	+D (+)
4		ST
5		T
6	2	+D (+)
7		−
8		ST
9		T
10	2	−
11	1	+D (+)
12		ST
13	Check result	T

Tape

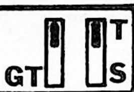
```
   < T

 2 < -
 1 < +
 1 c< S

 1 c< T

 2 < +
 1 < -
 1 < S

 1 < T

 2 < -
 1 < +
 1 c< S

 1 c< T
```

MC 26

Test

Manual operation

Presetting



Z1

Step	Enter	Operation
1	Clear register	T
2	2	−
3	1	÷ D
4		S
5		T
6	2	÷ D
7	1	−
8		S
9		T
10	2	−
11	1	÷ D
12		S
13	Check result	T

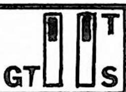
Tape

```
  < T

2 < -
1 < ÷
1 < S c

1 < T c

2 < ÷
1 < -
1 < S

1 < T

2 < -
1 < ÷
1 < S c

1 < T c
```

MC 26

Test
Manual operation

Presetting



Z2

Step	Enter	Operation	Tape
1	Clear register	T	< T
2	(Twelve 4's) 444444444444	+ D	444444444444 < +
3		+ D	444444444444 < +
4	4	+ D	4 < +
5	Check result	T	888888888892 < T
6		#	888888888892 < <
7	Check result	T	< T

Presetting A ▭● R ▭● ▯ Z3

MC 24

Test
Manual operation

Step	Enter	Operation
1	Clear register	T
2	(Twelve 5's) 555555555555	+D (⬭)
3	(Twelve 4's) 444444444444	+D (⬭)
4		ST
5		T
6	(Twelve 5's) 555555555555	−
7	(Twelve 4's) 444444444444	−
8		ST
9	Check result	T

Tape

```
                          < T

5 5 5 5 5 5 5 5 5 5 5 5 < ÷
4 4 4 4 4 4 4 4 4 4 4 4 < +
9 9 9 9 9 9 9 9 9 9 9 9 < S

9 9 9 9 9 9 9 9 9 9 9 9 < T

5 5 5 5 5 5 5 5 5 5 5 5 < -
4 4 4 4 4 4 4 4 4 4 4 4 < -
9 9 9 9 9 9 9 9 9 9 9 9c< S

9 9 9 9 9 9 9 9 9 9 9 9c< T
```

MC 26

Z3

Test
Manual operation

Presetting GT T S

Step	Enter	Operation	Tape
1	Clear register	T	
2	(Twelve 5's) 555555555555	+ D	< T
3	(Twelve 4's) 444444444444	+ D	5 5 5 5 5 5 5 5 5 5 5 5 < +
4		S	4 4 4 4 4 4 4 4 4 4 4 4 < + 9 9 9 9 9 9 9 9 9 9 9 9 < S
5		T	
6	(Twelve 5's) 555555555555	−	9 9 9 9 9 9 9 9 9 9 9 9 < T
7	(Twelve 4's) 444444444444	−	5 5 5 5 5 5 5 5 5 5 5 5 < −
8		S	4 4 4 4 4 4 4 4 4 4 4 4 < − 9 9 9 9 9 9 9 9 9 9 9 9 < S c
9	Check result	T	9 9 9 9 9 9 9 9 9 9 9 9 < T c

MC 24

Test
Multiplication

Presetting A R Z4

Step	Enter	Operation
1	Clear register	T
2	1234	X
3		N A OUT
4		X
5		N A OUT
6	123456789012	X
7		N A OUT
8		+ D (+)
9		N A OUT
10	987654321098	X
11		N A OUT
12		−
13		N A OUT
14		X
15		N A OUT

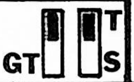
Tape

```
                                  < T

                        1 2 3 4 < < x
                        1 2 3 4 < < x
                                < < x
                                < < x
1 2 3 4 5 6 7 8 9 0 1 2 < < x
1 2 3 4 5 6 7 8 9 0 1 2 < < x
                        < +
1 2 3 4 5 6 7 8 9 0 1 2 < < x
9 8 7 6 5 4 3 2 1 0 9 8 < < x
9 8 7 6 5 4 3 2 1 0 9 8 < < x
                        < -
9 8 7 6 5 4 3 2 1 0 9 8 < < x
                        < < x
                        < < x
```

MC 26

Test
Multiplication

Presetting



Z 4

Step	Enter	Operation
1	Clear register	T
2	1234	X
3		÷ RM
4		T
5		X
6		÷ RM
7	123456789012	X
8		÷ RM
9		T
10		÷ RM
11	987654321098	X
12		÷ RM
13		T
14		÷ RM
15		T
16		X
17		÷ RM

Tape

```
                         < T

                 1 2 3 4 < < X
                 1 2 3 4 < < X
                         < T

                         < < X
                         < < X
 1 2 3 4 5 6 7 8 9 0 1 2 < < X
 1 2 3 4 5 6 7 8 9 0 1 2 < < X
                         < T

 1 2 3 4 5 6 7 8 9 0 1 2 < < X
 9 8 7 6 5 4 3 2 1 0 9 8 < < X
 9 8 7 6 5 4 3 2 1 0 9 8 < < X
                         < T

 9 8 7 6 5 4 3 2 1 0 9 8 < < X
                         < T

                         < < X
                         < < X
```

MC 24

Test
Multiplication

Presetting A ●▭ R ▭● **Z5**

Step	Enter	Operation
1	Clear register	T
2	(1 with eleven zeros) 100000000000	X
3	1	=
4	Check result	
5	1	⊜
6	Check result	
7	(9 with eleven zeros) 900000000000	X
8	1	=
9	The machine should not cycle	
10		(NA)
11	123	X
12		=
13	The machine should not cycle	
14		(NA)

Tape

```
                          < T

1 0 0 0 0 0 0 0 0 0 0 0 < < x
                      1   =
1 0 0 0 0 0 0 0 0 0 0 0 < T

                      1   x̲
1 0 0 0 0 0 0 0 0 0 0 0∝< T

9 0 0 0 0 0 0 0 0 0 0 0 < < x
                      1 < =
                  1 2 3 < < x
                        < <
```

MC 26

Z5

Test
Multiplication

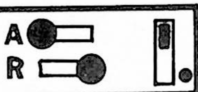
Presetting GT T S

Step	Enter	Operation
1	Clear register	T
2	(1 with eleven zeros) 100000000000	×
3	1	=
4	Check result	
5	1	⊜
6	Check result	
7	(9 with eleven zeros) 900000000000	×
8	1	=
9	The machine should not cycle	
10		#
11	123	×
12		=
13	Machine should not cycle	
14		#

Tape

```
                         < T

1 0 0 0 0 0 0 0 0 0 0 0 < < x
                      1   =
1 0 0 0 0 0 0 0 0 0 0 0 < T

                      1   x
1 0 0 0 0 0 0 0 0 0 0 0 < T c

9 0 0 0 0 0 0 0 0 0 0 0 < < x
                      1 < <
                  1 2 3 < < x
                  1 2 3 < <
```

Presetting



Z6 MC 24

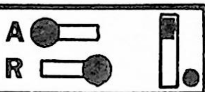
Test
Multiplication **(1)**

Step	Enter	Operation
1	Clear register	T
2	90	×
3	1	=
4	Check result	
5	1	⊜
6	Check result	
7	990	×
8	1	=
9	Check result	
10	1	⊜
11	Check result	
12	990000	×
13	1	=
14	Check result	
15	(continues on page 2)	

Tape

```
          < T
     9 0 < < X
       1     =
     9 0 <   T
       1     X
     9 0 c<  T
   9 9 0 < < X
       1     =
   9 9 0 <   T
       1     X
   9 9 0 c<  T
9 9 0 0 0 0 < < X
          1     =
9 9 0 0 0 0 <   T
```

Presetting



Z6

(Continued from previous page)

Step	Enter	Operation
16	1	(=)
17	Check result	
18	(9 with ten zeros) 90000000000	[×]
19	1	[=]
20	Check result	
21	1	(=)
22	Check result	
23	(1 with eleven zeros) 100000000000	[×]
24	1	[=]
25	Check result	
26	1	(=)
27	Check result	
28	12	[×]
29	12	(TR)
30	12	[=]
31	Check result	

Tape

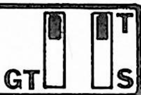
```
                        1   ×
                9 9 0 0 0 0c< T

    9 0 0 0 0 0 0 0 0 0 0 < < x
                        1   =
    9 0 0 0 0 0 0 0 0 0 0 < T

                        1   ×
    9 0 0 0 0 0 0 0 0 0 0c< T
  1 0 0 0 0 0 0 0 0 0 0 0 < < x
                        1   =
  1 0 0 0 0 0 0 0 0 0 0 0 < T

                        1   ×
  1 0 0 0 0 0 0 0 0 0 0 0c< T

                      1 2 < < x
                      1 2   =
                    1 4 4 < T x

                      1 2   =
                  1 7 2 8 < T
```

MC 26

Z6

Test
Multiplication **(1)**

Presetting

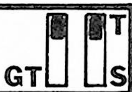


Step	Enter	Operation
1	Clear register	[T]
2	90	[×]
3	1	[=]
4	Check result	
5	1	⊜
6	Check result	
7	990	[×]
8	1	[=]
9	Check result	
10	1	⊜
11	Check result	
12	990000	[×]
13	1	[=]
14	Check result	
15	1	⊜
16	Check result	
17	(9 with ten zeros) 9000000000	[×]
18	1	[=]
19	Check result	
20	(continues on page 2)	

Tape

```
                    < T
               90 < < X
                1   =
               90 < T
                1   ×
               90 < T C
              990 < < X
                1   =
              990 < T
                1   ×
              990 < T C
           990000 < < X
                1   =
           990000 < T
                1   ×
           990000 < T C
      90000000000 < < X
                1   =
      90000000000 < T
```

Presetting



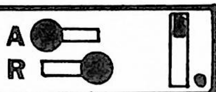
Z6

(Continued from previous page)

Step	Enter	Operation
21	1	(=)
22	Check result	
23	(1 with eleven zeros) 100000000000	[×]
24	1	[=]
25	Check result	
26	1	(=)
27	Check result	
28	12	(xⁿ) [×]
29		(xⁿ) (TR)
30	Check result	
31		(xⁿ) [=]
32	Check result	

Tape

```
               1   ×
  90000000000  <   T  c
 100000000000  <   <  x
               1   =
1000000000000  <   T
               1   ×
1000000000000  <   T  c
              12   <  <  x
              12   =
             144   <  T  x
              12   =
            1728   <  T
```



Z7 **MC 24**

Test Division **(1)**

Step	Enter	Operation
1	Clear register	T
2	(1 with eleven zeros) 100000000000	÷ D
3	(1 with eleven zeros) 100000000000	÷
4	The machine should not perform the division	
5		NA
6	123	−
7	1	÷
8	The machine should not perform the division	
9		NA
10	123	÷ D
11		÷
12	The machine should not perform the division	
13		NA
14	(continues on page 2)	

Tape

```
                           < T

  1 0 0 0 0 0 0 0 0 0 0 0 < ÷
  1 0 0 0 0 0 0 0 0 0 0 0 < S
  1 0 0 0 0 0 0 0 0 0 0 0 < <
  1 0 0 0 0 0 0 0 0 0 0 0 < T

                    1 2 3 < -
9 9 9 9 9 9 9 9 9 9 8 7 6 < :
  1 0 0 0 0 0 0 0 0 0 0 0 < :
                    1 2 3c< T

                    1 2 3 < ÷
                    1 2 3 < S
  9 0 0 0 0 0 0 0 0 0 0 0 < :
                    1 2 3 < T
```

Presetting A R **Z7**

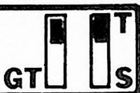
(Continued from previous page)

Step	Enter	Operation
15	(1 with eleven zeros) 100000000000	+ D
16	1	÷
17	Check result	
18	(9 with eleven zeros) 900000000000	+ D
19	9	÷
20	Check result	
21	(Twelve 1's) 111111111111	+ D
22	9	÷
23	Check result	

Tape

```
1 0 0 0 0 0 0 0 0 0 0 0 < +
1 0 0 0 0 0 0 0 0 0 0 0 < :
                      1 < :
1 0 0 0 0 0 0 0 0 0 0 0 < T
                        < T

9 0 0 0 0 0 0 0 0 0 0 0 < +
9 0 0 0 0 0 0 0 0 0 0 0 < :
                      9 < :
1 0 0 0 0 0 0 0 0 0 0 0 < T
                        < T

1 1 1 1 1 1 1 1 1 1 1 1 < +
1 1 1 1 1 1 1 1 1 1 1 1 < :
                      9 < :
  1 2 3 4 5 6 7 9 0 1 2 < T
                      3 < T
```

Presetting



Z7

MC 26

Test
Division

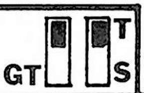
(1)

Step	Enter	Operation
1	Clear register	T
2	(1 with eleven zeros) 100000000000	+ D
3	(1 with eleven zeros) 100000000000	÷ RM
4	The machine should not perform the division	
5		#
6	123	−
7	1	÷ RM
8	The machine should not perform the division	
9		#
10	123	+ D
11		÷ RM
12	The machine should not perform the division	
13		#
14		T
15	(Continues on page 2)	

Tape

```
                                < T

  1 0 0 0 0 0 0 0 0 0 0 0 < +
  1 0 0 0 0 0 0 0 0 0 0 0 < S
  1 0 0 0 0 0 0 0 0 0 0 0 < <
  1 0 0 0 0 0 0 0 0 0 0 0 < T

                    1 2 3 < -
9 9 9 9 9 9 9 9 9 8 7 6 < :
  1 0 0 0 0 0 0 0 0 0 0 0 < :
                    1 2 3 < T e

                    1 2 3 < +
                          < <  x
                          < <
                    1 2 3 < T
```

Presetting



Z7

(continued from previous page)

(2)

Step	Enter	Operation
16	(1 with eleven zeros) 100000000000	+ D
17	1	÷ RM
18	Check result	
19	(9 with eleven zeros) 900000000000	+ D
20	9	÷ RM
21	Check result	
22	(Twelve 1's) 111111111111	+ D
23	9	÷ RM
24	Check result	

Tape

```
 1 0 0 0 0 0 0 0 0 0 0 0 < +
 1 0 0 0 0 0 0 0 0 0 0 0 < :
                       1 < :
→1 0 0 0 0 0 0 0 0 0 0 0 < T
                       → < T

 9 0 0 0 0 0 0 0 0 0 0 0 < +
 9 0 0 0 0 0 0 0 0 0 0 0 < :
                       9 < :
→1 0 0 0 0 0 0 0 0 0 0 0 < T
                       → < T

 1 1 1 1 1 1 1 1 1 1 1 1 < +
 1 1 1 1 1 1 1 1 1 1 1 1 < :

                       9 < :
  →1 2 3 4 5 6 7 9 0 1 2 < T
                      →3 < T
```

MC 20

Z8

Test
Manual operations

Presetting
Repeat key off
Automatic total off

Step	Enter	Oper.
1	Clear register	T
2	(ten 1's) 1111111111	+
3	(Ten 2's) 2222222222	−
4	(Ten 3's) 3333333333	#
5	(Ten 4's) 4444444444	#
6	(Ten 5's) 5555555555	#
7	(Ten 6's) 6666666666	#
8	(Ten 7's) 7777777777	#
9	(Ten 8's) 8888888888	#
10	(Ten 9's) 9999999999	#
11		S
12	Check result	T
13	1	+
14	2	−
15	2	+
16	2	−
17	Check result	T
18	(Ten 1's) 1111111111	+
19	(Ten 8's) 8888888888	+
20		S
21	Check result	T

Tape

```
                                T

1 1,1 1 1,1 1 1.1 1
2 2,2 2 2,2 2 2.2 2   -
3 3,3 3 3,3 3 3.3 3 <
4 4,4 4 4,4 4 4.4 4 <
5 5,5 5 5,5 5 5.5 5 <
6 6,6 6 6,6 6 6.6 6 <
7 7,7 7 7,7 7 7.7 7 <
8 8,8 8 8,8 8 8.8 8 <
9 9,9 9 9,9 9 9.9 9 <
1 1,1 1 1,1 1 1.1 1 S -

1 1,1 1 1,1 1 1.1 1 T -

                  1
                  2   -
                  2
                  2   -
                  1 T -

1 1,1 1 1,1 1 1.1 1
8 8,8 8 8,8 8 8.8 8
9 9,9 9 9,9 9 9.9 9 S

9 9,9 9 9,9 9 9.9 9 T
```

MC 23

Z8

Test
Manual Operations

Presetting
Repeat key off

Step	Enter	Oper.
1	Clear register	T
2	(Twelve 1's) 111111111111	+
3	(Twelve 2's) 222222222222	−
4	(Twelve 3's) 333333333333	#
5	(Twelve 4's) 444444444444	#
6	(Twelve 5's) 555555555555	#
7	(Twelve 6's) 666666666666	#
8	(Twelve 7's) 777777777777	#
9	(Twelve 8's) 888888888888	#
10	(Twelve 9's) 999999999999	#
11		S
12	Check result	T
13	1	+
14	2	−
15	2	+
16	2	−
17	Check result	T
18	(Twelve 1's) 111111111111	+
19	(Twelve 8's) 888888888888	+
20		S
21	Check result	T

Tape

```
                         0 0 T -

1,1 1 1,1 1 1,1 1 1.1 1
2,2 2 2,2 2 2,2 2 2.2 2   -
3,3 3 3,3 3 3,3 3 3.3 3 <
4,4 4 4,4 4 4,4 4 4.4 4 <
5,5 5 5,5 5 5,5 5 5.5 5 <
6,6 6 6,6 6 6,6 6 6.6 6 <
7,7 7 7,7 7 7,7 7 7.7 7 <
8,8 8 8,8 8 8,8 8 8.8 8 <
9,9 9 9,9 9 9,9 9 9.9 9 <
1,1 1 1,1 1 1,1 1 1.1 1 S -

1,1 1 1,1 1 1,1 1 1.1 1 T -

                      1
                      2   -
                      2
                      2   -
                    0 1 T -

1,1 1 1,1 1 1,1 1 1.1 1
8,8 8 8,8 8 8,8 8 8.8 8
9,9 9 9,9 9 9,9 9 9.9 9 S

9,9 9 9,9 9 9,9 9 9.9 9 T
```

Presetting Repeat key off
Automatic total on

Z9

MC 20/M

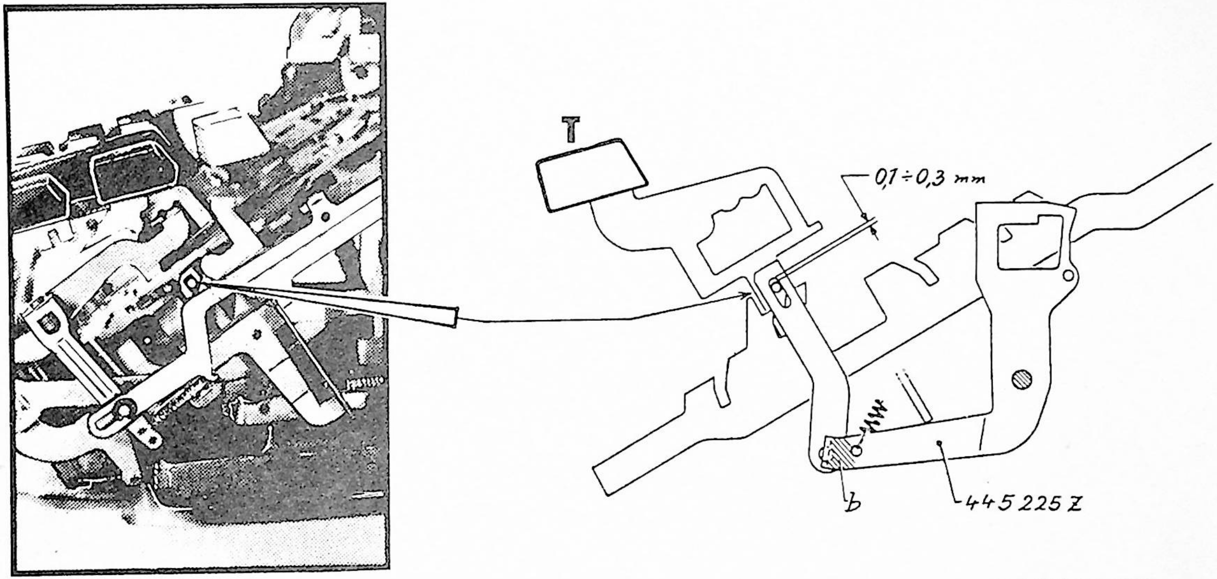
Test
Multiplication

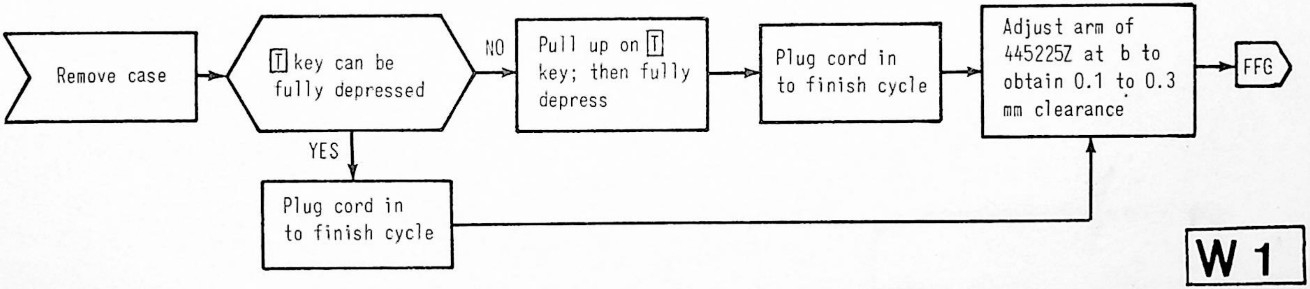
Step	Enter	Operation
1	Clear register	T
2	(Ten 1's) 1111111111	×
3 4	10 Key should not go down	=
5	10101010	×
6	1	=
7	Check result	
8	1	×
9	1	=
10	Check result	
11	123456789	×
12	9	=
13	Check result	

Tape

```
                      T

1 1,1 1 1,1 1 1.1 1 ×
1 0,1 0 1,0 1 0.1 0 ×
                  1 =
1 0,1 0 1,0 1 0.1 0 T

                  1 ×
                  1 =
                  1 T

  1,2 3 4,5 6 7.8 9 ×
                  9 =
1 1,1 1 1,1 1 1.0 1 T
```

MC26 D/GT - T key





Remove case

T key can be fully depressed

NO: Pull up on T key; then fully depress

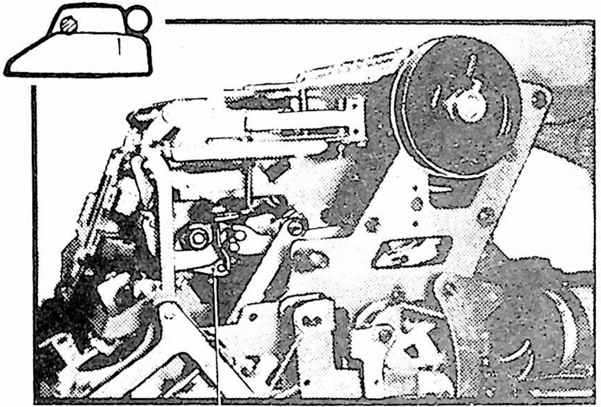
Plug cord in to finish cycle

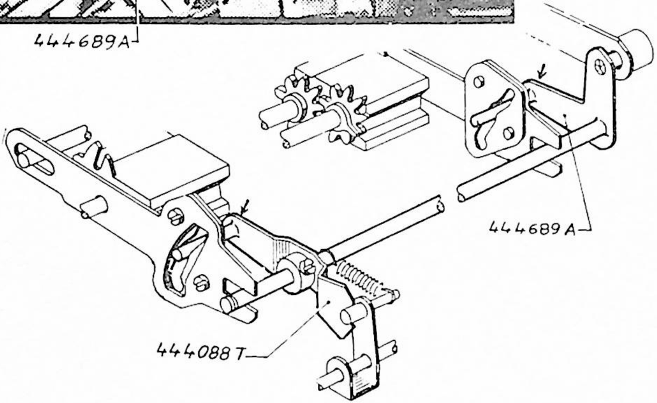
YES: Plug cord in to finish cycle

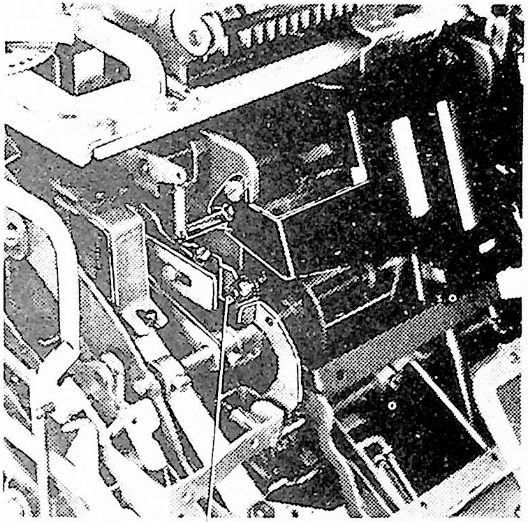
Adjust arm of 445225Z at b to obtain 0.1 to 0.3 mm clearance

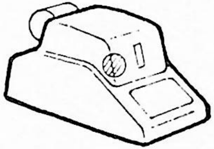
FFG

MC24 - REGISTER ENGAGEMENT AND DISENGAGEMENT CONTROL FRAME 444689A AND CRANK 444088T





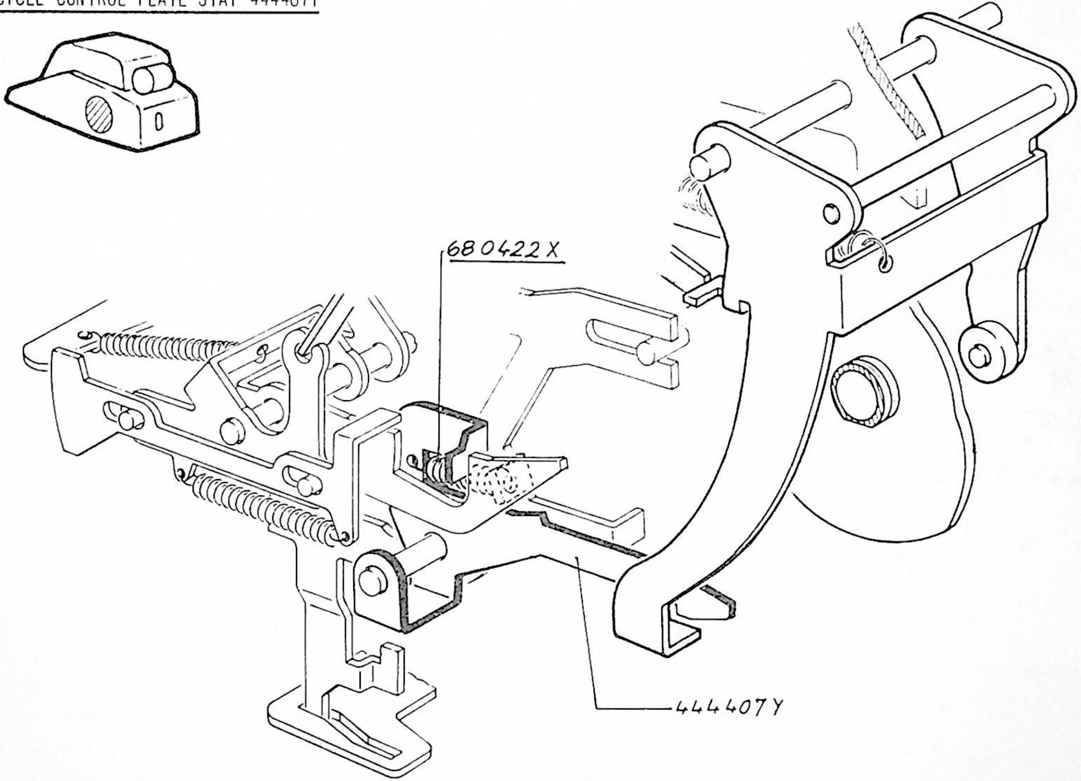




- If crank 444088T is broken
- If frame 444689A is broken

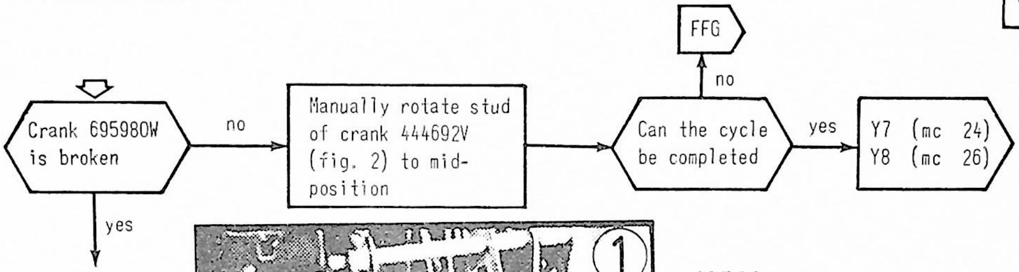
} Machine to shop

PRECYCLE CONTROL PLATE STAY 444407Y

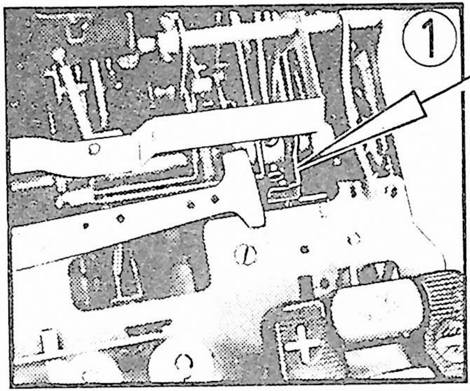


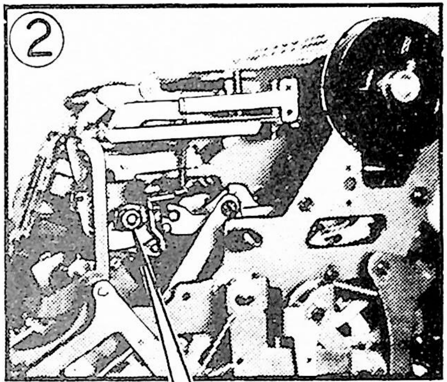
- If spring 680422X is broken, manually rotate the adjacent parts to uncover the anchor points; then replace spring

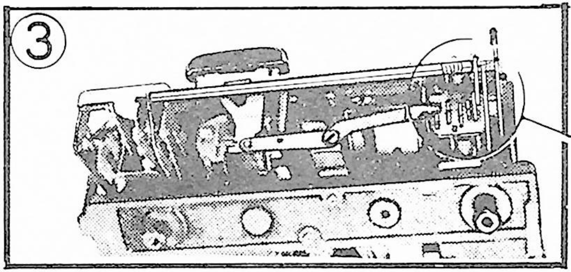
CALCULATION SLIDER CONTROL CRANK 695980W

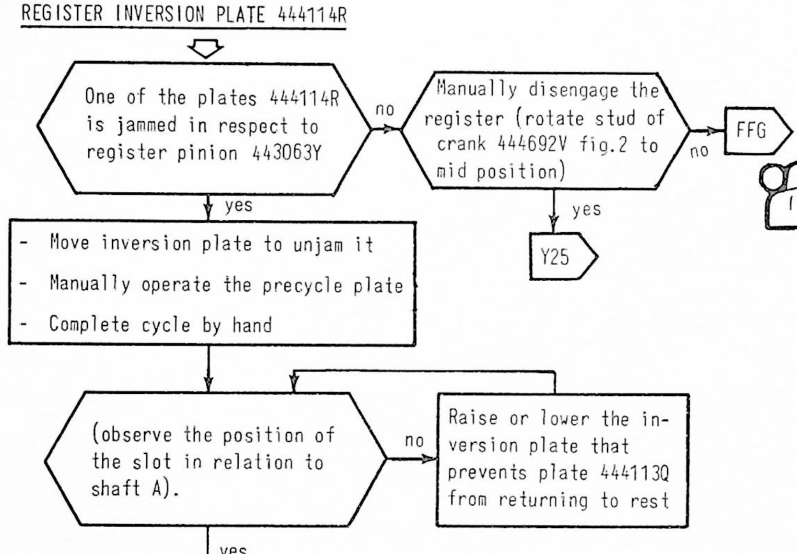
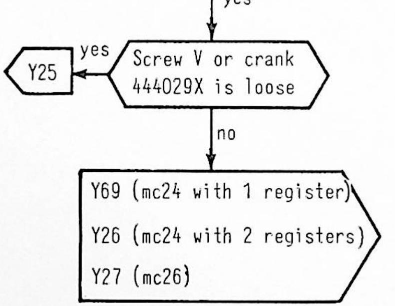

Crank 695980W is broken
no
Manually rotate stud of crank 444692V (fig. 2) to mid-position
Can the cycle be completed
no
FFG
yes
Y7 (mc 24)
Y8 (mc 26)
yes

- Manually disengage the register (rotate stud of crank 444692V fig. 2 to mid position)
- Manually push precycle plate rearward
- Complete cycle by hand
- Check that calculation control sliders are in their respective front guides (fig. 3)
- To replace crank go to X1

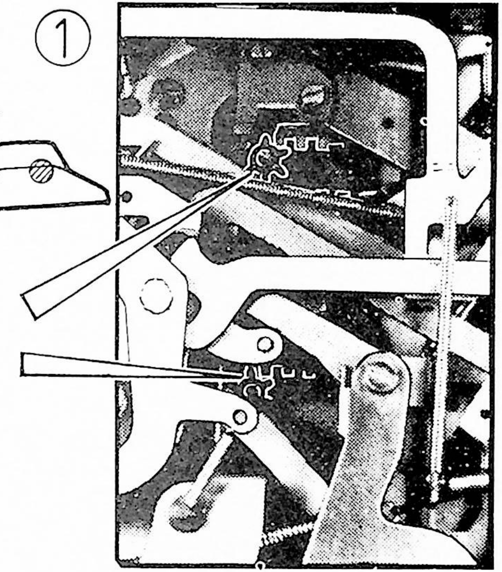




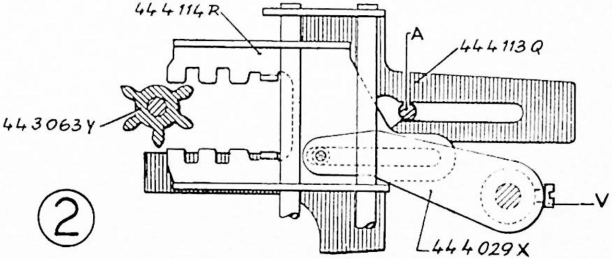




REGISTER INVERSION PLATE 444114R
One of the plates 444114R is jammed in respect to register pinion 443063Y
no
Manually disengage the register (rotate stud of crank 444692V fig.2 to mid position)
no
FFG
yes
Y25
yes
- Move inversion plate to unjam it
- Manually operate the precycle plate
- Complete cycle by hand
(observe the position of the slot in relation to shaft A).
no
Raise or lower the inversion plate that prevents plate 444113Q from returning to rest
yes
Screw V or crank 444029X is loose
yes
Y25
no
Y69 (mc24 with 1 register)
Y26 (mc24 with 2 registers)
Y27 (mc26)

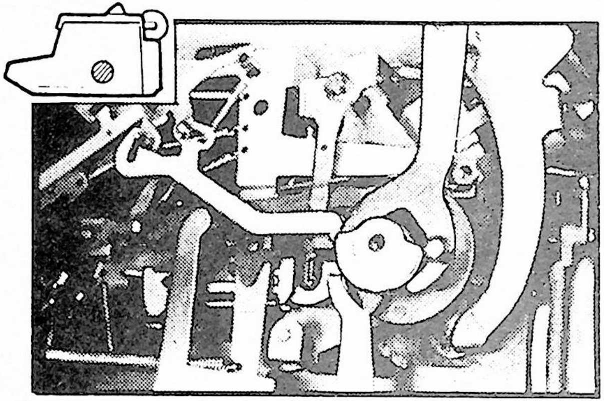
①



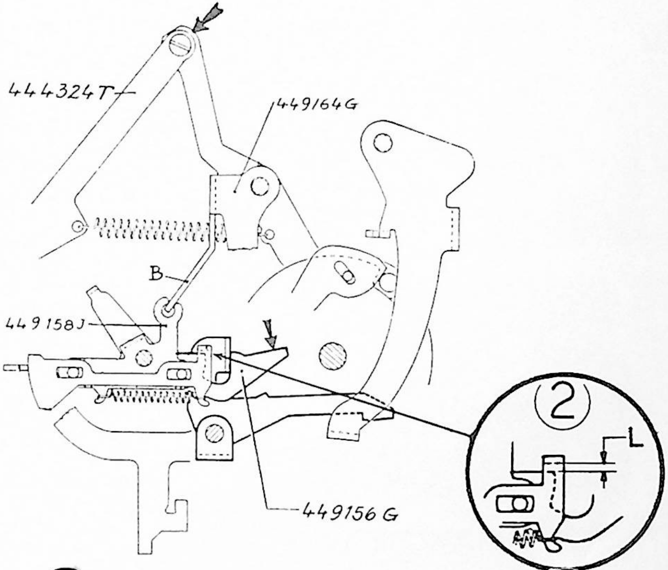
②

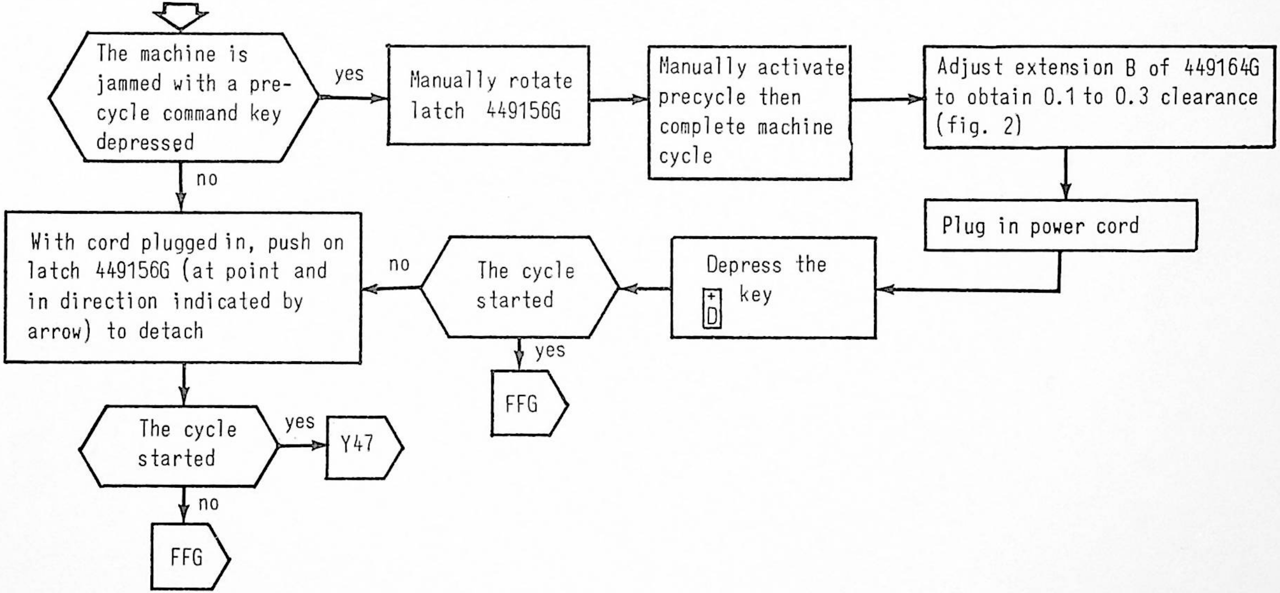

444114R
A
444113Q
443063Y
V
444029X

MC26 - PRECYCLE COMMAND CONTROL 449158J

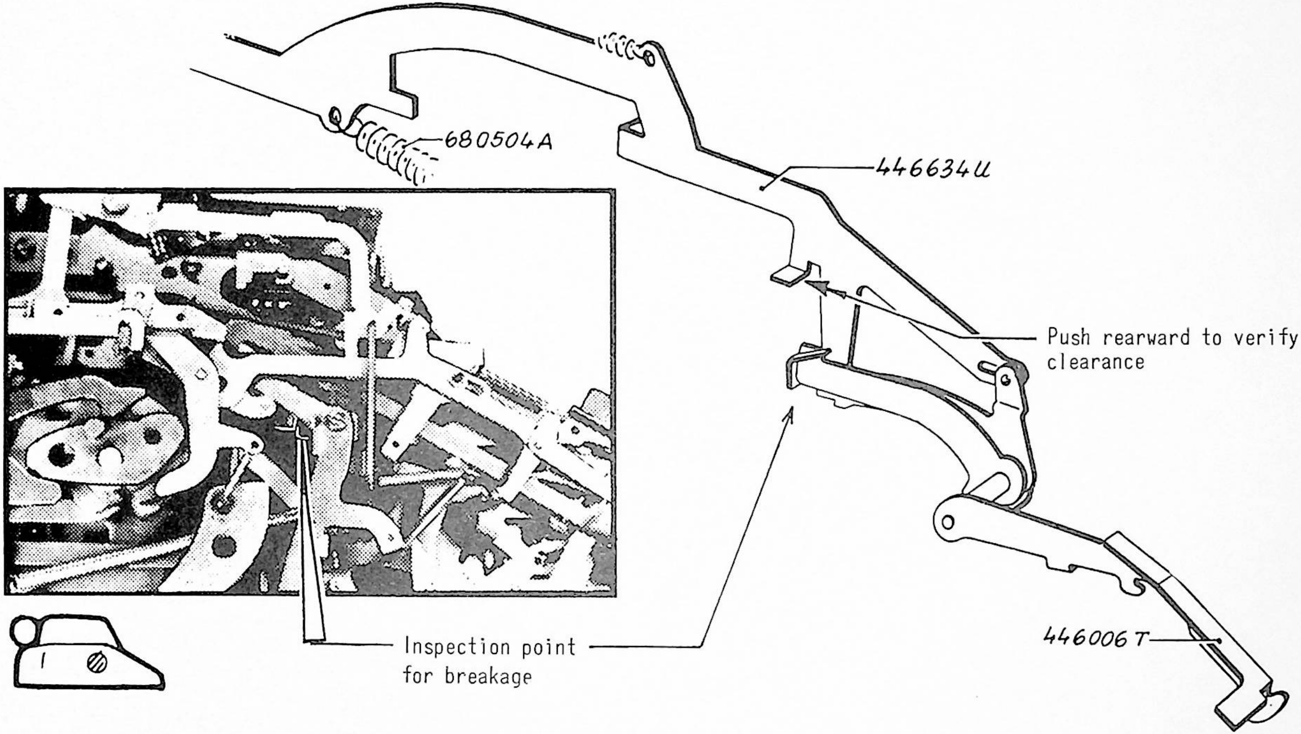


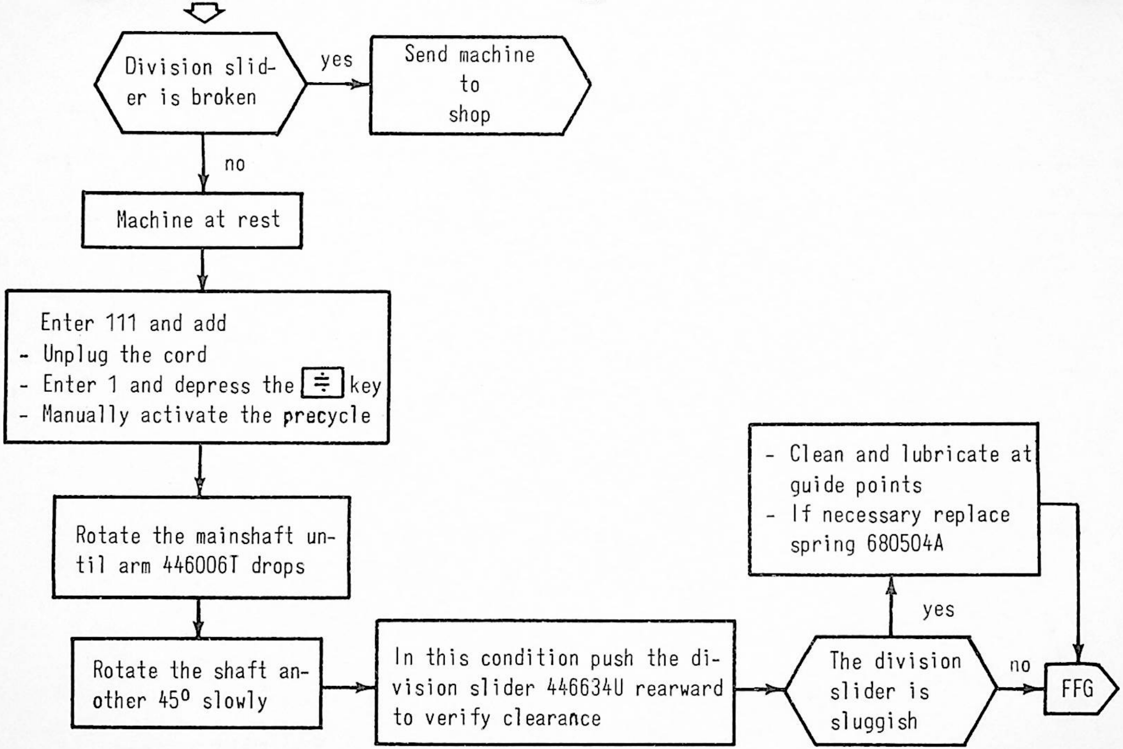
①




The machine is jammed with a pre-cycle command key depressed
yes
Manually rotate latch 449156G
Manually activate precycle then complete machine cycle
Adjust extension B of 449164G to obtain 0.1 to 0.3 clearance (fig. 2)
Plug in power cord
Depress the + D key
The cycle started
yes
FFG
no
no
With cord plugged in, push on latch 449156G (at point and in direction indicated by arrow) to detach
The cycle started
yes
Y47
no
FFG

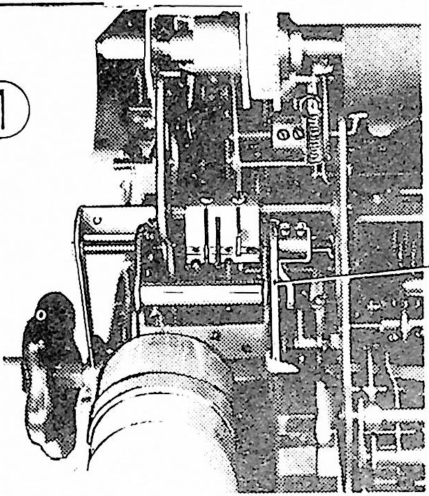
MC24 - DIVISION SLIDER 446634U

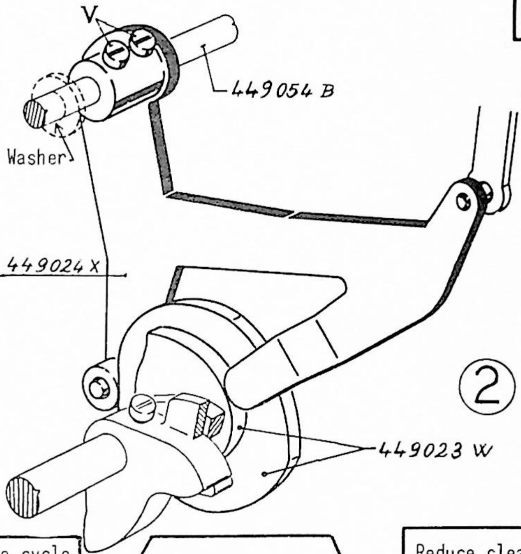

680504A
446634U
Push rearward to verify clearance
Inspection point for breakage
446006 T
I


Division slider is broken
yes
Send machine to shop
no
Machine at rest
Enter 111 and add
- Unplug the cord
- Enter 1 and depress the ÷ key
- Manually activate the precycle
Rotate the mainshaft until arm 446006T drops
Rotate the shaft another 45° slowly
In this condition push the division slider 446634U rearward to verify clearance
The division slider is sluggish
yes
- Clean and lubricate at guide points
- If necessary replace spring 680504A
no
FFG

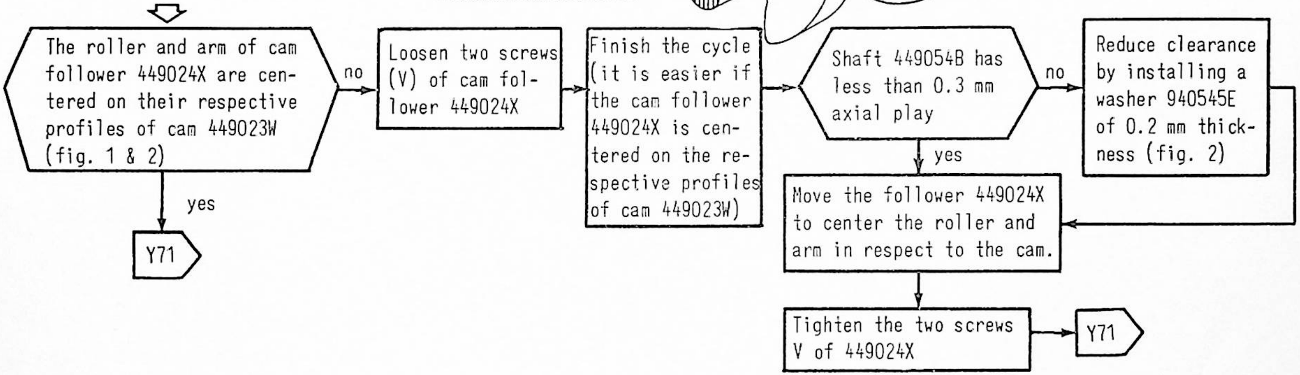
MC26 - CAM FOLLOWER 449024X

①





②



The roller and arm of cam follower 449024X are centered on their respective profiles of cam 449023W (fig. 1 & 2)

yes → Y71

no → Loosen two screws (V) of cam follower 449024X

Finish the cycle (it is easier if the cam follower 449024X is centered on the respective profiles of cam 449023W)

Shaft 449054B has less than 0.3 mm axial play

no → Reduce clearance by installing a washer 940545E of 0.2 mm thickness (fig. 2)

yes → Move the follower 449024X to center the roller and arm in respect to the cam.

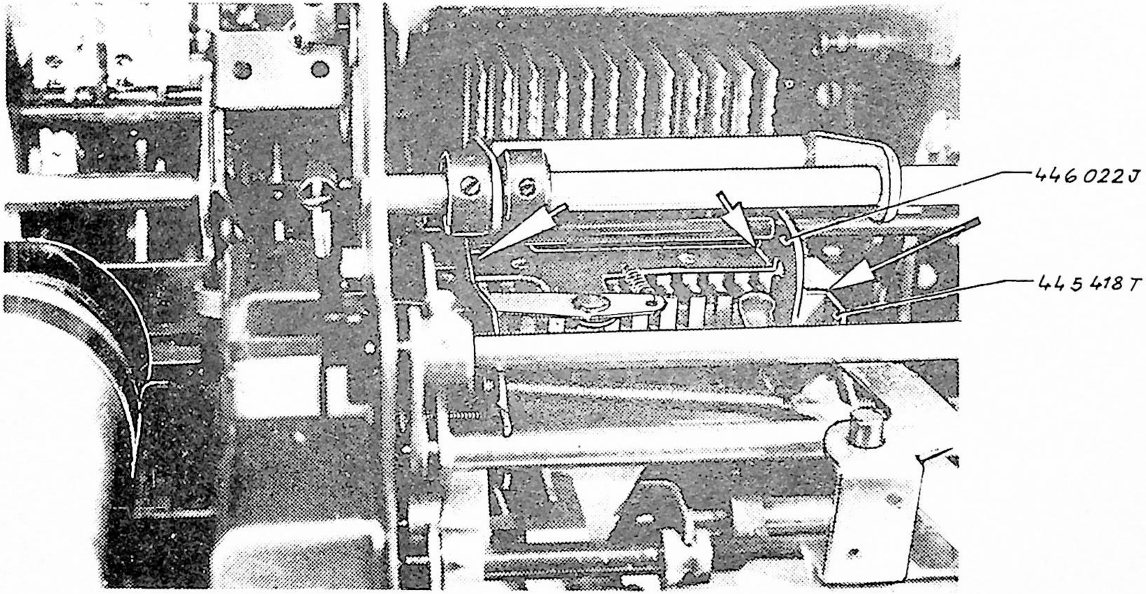
Tighten the two screws V of 449024X

Y71

MC24 - COMB 445418T

MC24 - QUOTIENT COUNTER 446022J

(Check for breakage at the points indicated by arrows)



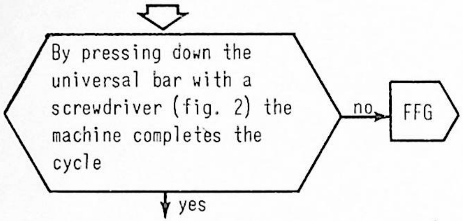
If comb 445418T is broken;
send machine to shop

W9

- If the quotient counter frame is broken replace X2

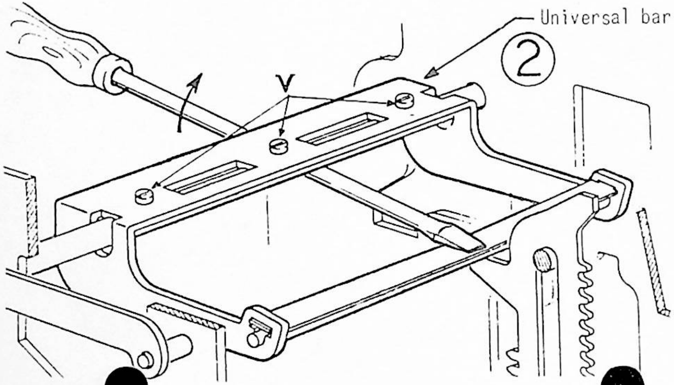
W10

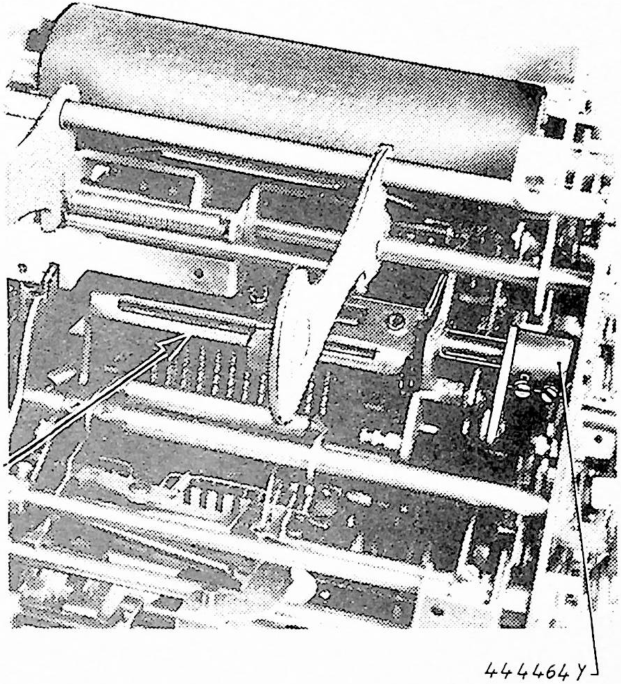
UNIVERSAL BAR 444765D

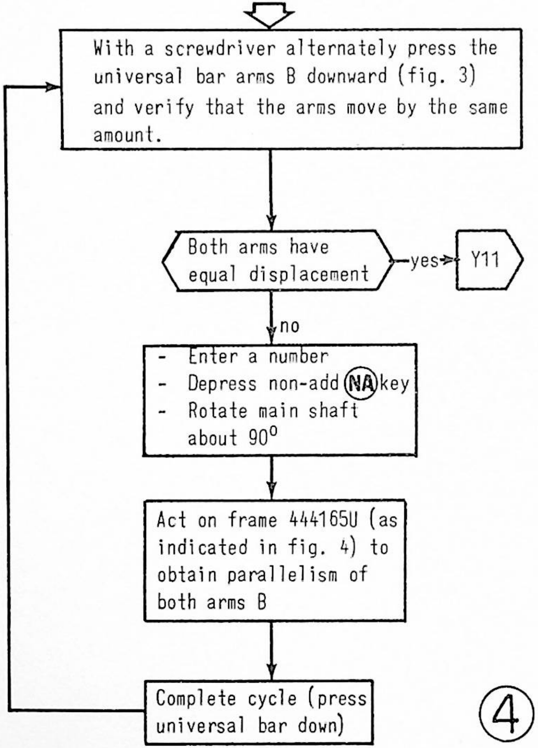


By pressing down the universal bar with a screwdriver (fig. 2) the machine completes the cycle

- As you hold the universal bar depressed (fig. 2) unscrew the two screws of crank 444464Y; exchange their position; then tighten fully the cup set screw and tighten the other friction tight as universal bar is pressed down (fig. 1 & 2)
- Enter a number in the keyboard, then depress the **NA** (non-add) key and rotate main shaft until the three V screws are accessible; then check for tightness
- Complete cycle (push down on universal to make it easier)







With a screwdriver alternately press the universal bar arms B downward (fig. 3) and verify that the arms move by the same amount.

Both arms have equal displacement

yes → Y11

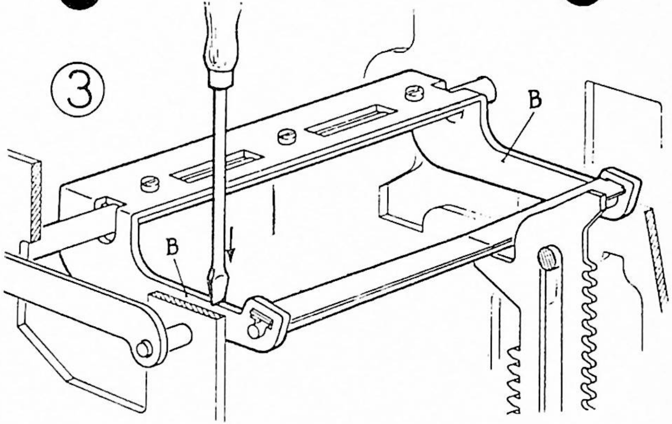
no

- Enter a number
- Depress non-add (NA) key
- Rotate main shaft about 90°

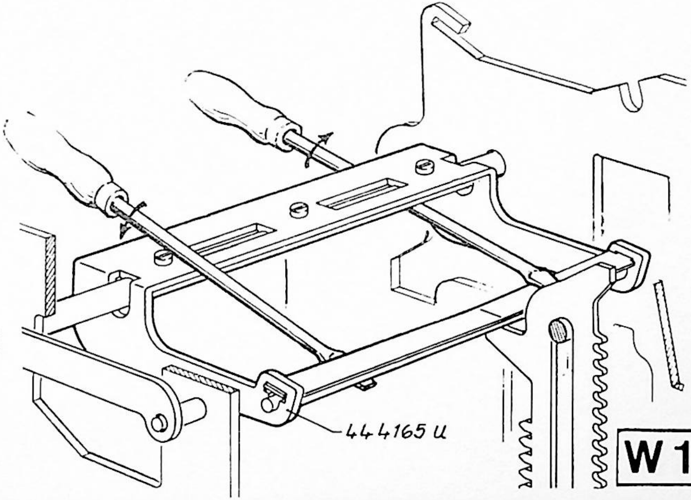
Act on frame 444165U (as indicated in fig. 4) to obtain parallelism of both arms B

Complete cycle (press universal bar down)

③



④



MC26 - SECOND MEMORY CLEAR BAR 449115X

Remove retaining clip S

Detach the 449128C from pin P

Rotate crank 449126S in the direction shown by the arrow and hold rotated

The main shaft can finish the cycle

yes

Finish cycle

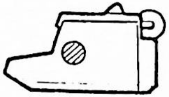
Y70

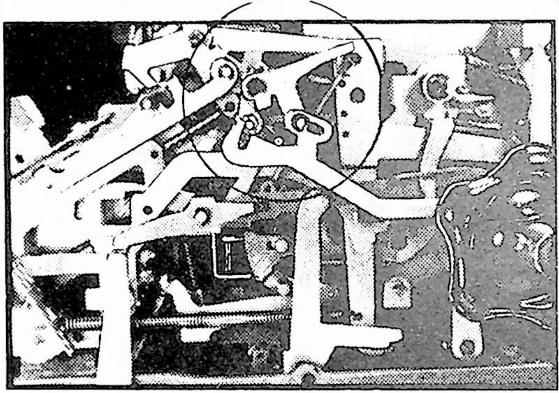
no

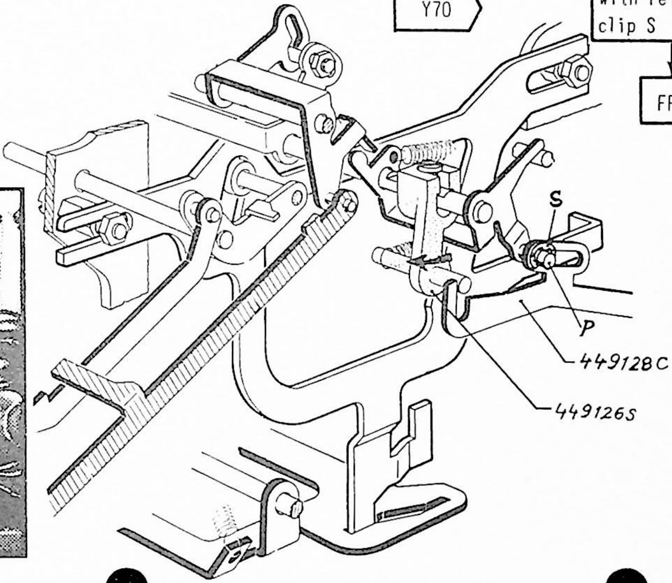
Rotate crank 449126S counterclockwise

Reinstall part 449128C on stud P and fasten with retainer clip S

FFG







PRINT WHEEL RACKS

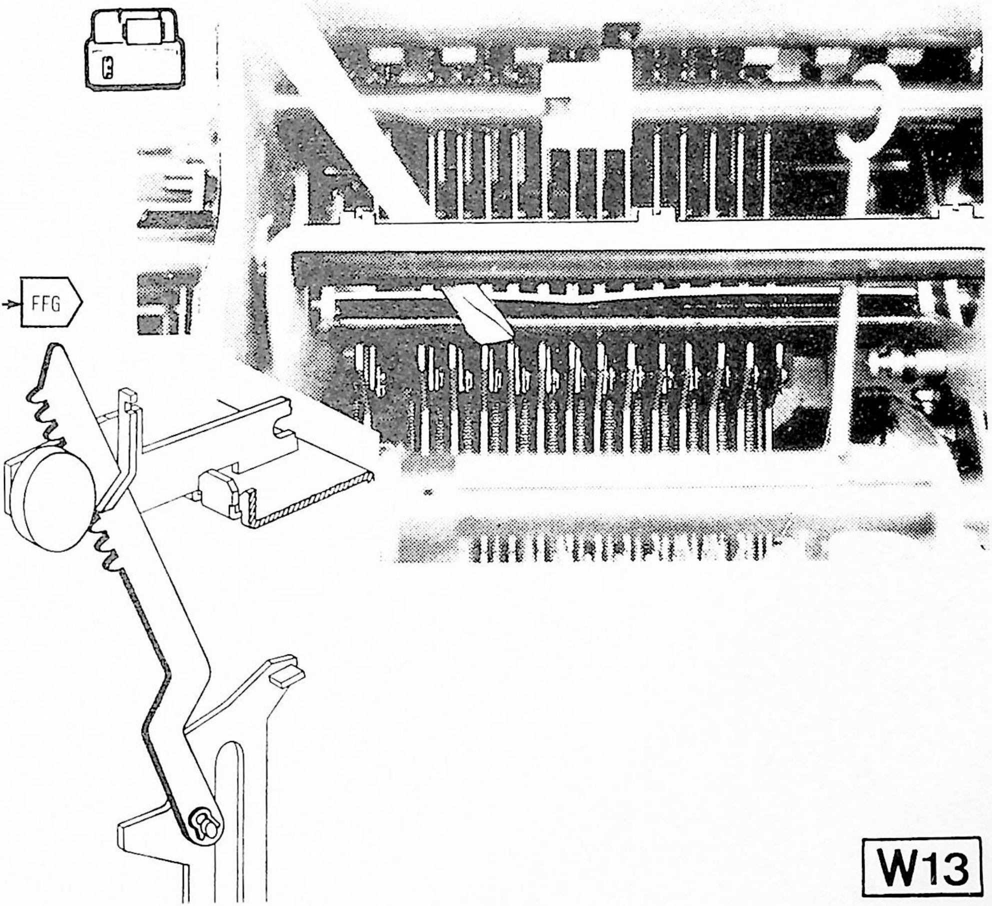
Check that all print wheel racks are properly positioned

Some racks are missing — no → FFG

yes

Remove loose rack from inside machine; then complete cycle

Reinstall rack X3



MC26 - C SYMBOL CONTROL PLATE 449020F

Extension A of plate 449020F is as shown in fig. 1

no → FFG

- Unplug cord
- Push the credit balance stay t downward (fig. 1)

Depress the black T key.

- Manually operate pre-cycle
- With screwdriver lower extension A (fig. 1)

Complete cycle

Straighten extension A

Depress the T key and manually operate the pre-cycle

Rotate main shaft until the condition shown in fig. 2 is obtained

Between the cam and lip K there is clearance L (fig. 2)

no →
- Complete cycle
- Act on extension K

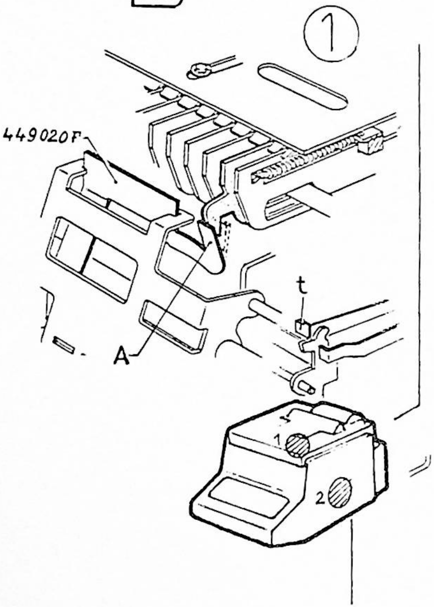
yes →

The machine has position 449439G (fig. 2)

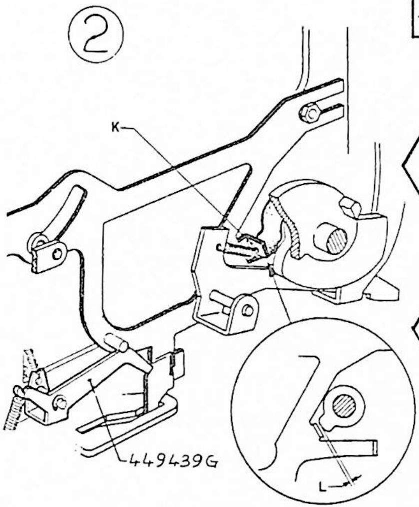
no → X4

yes → FFG

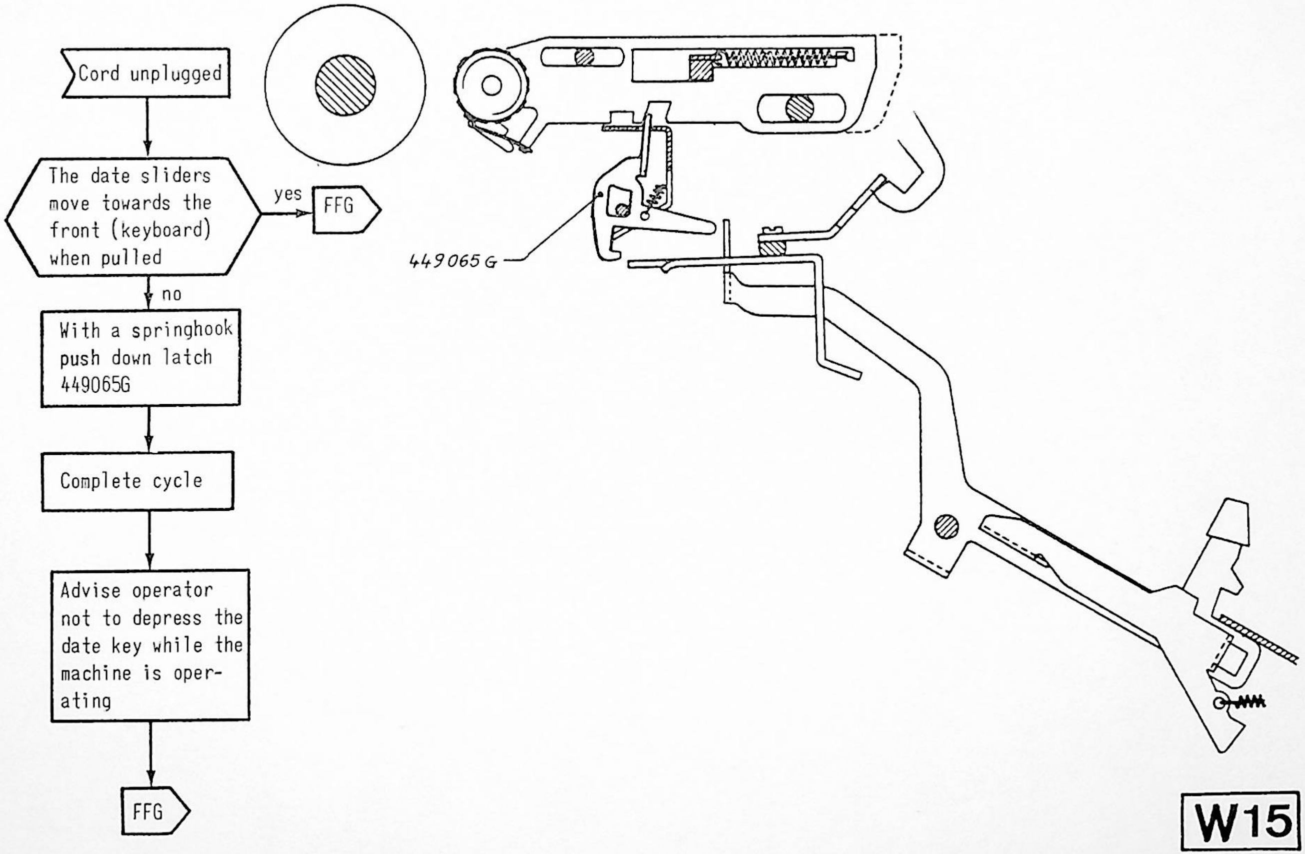
①



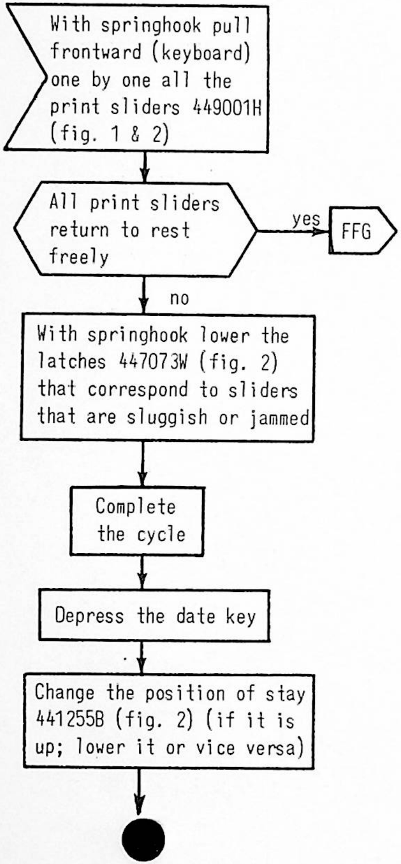
②



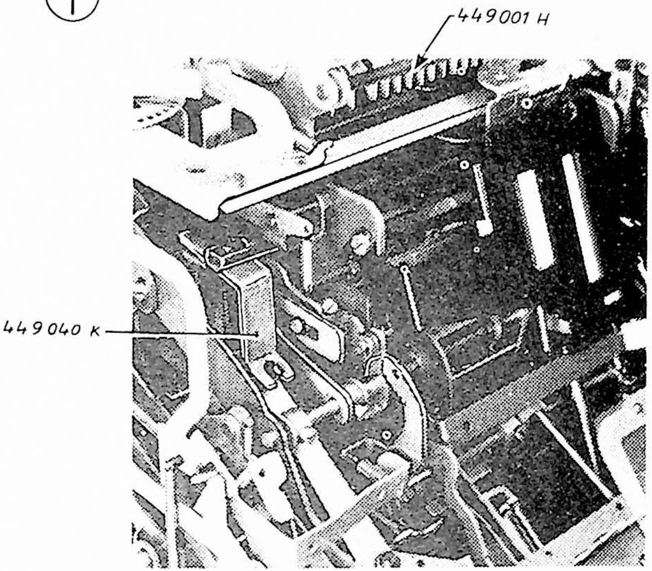
MC26 - DATE PRINT SLIDER

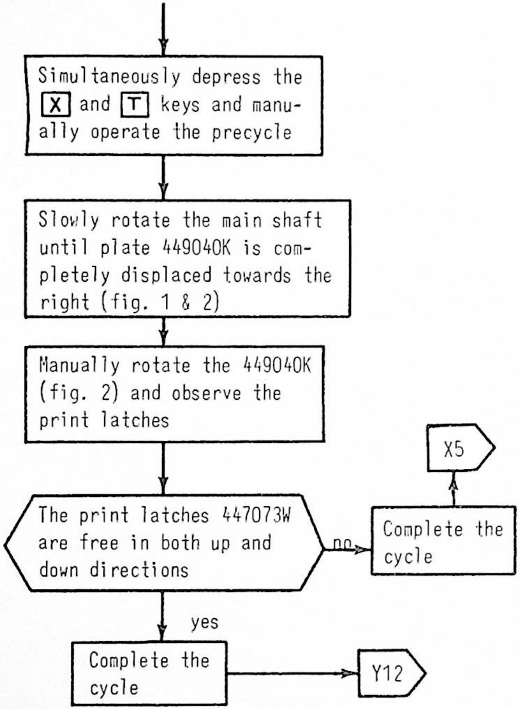

Cord unplugged
The date sliders move towards the front (keyboard) when pulled
yes
FFG
no
With a springhook push down latch 449065G
Complete cycle
Advise operator not to depress the date key while the machine is operating
FFG
449065 G

MC26 - PRINT LATCHES 447073W


With springhook pull frontward (keyboard) one by one all the print sliders 449001H (fig. 1 & 2)
All print sliders return to rest freely
yes
FFG
no
With springhook lower the latches 447073W (fig. 2) that correspond to sliders that are sluggish or jammed
Complete the cycle
Depress the date key
Change the position of stay 441255B (fig. 2) (if it is up; lower it or vice versa)

①





Simultaneously depress the X and T keys and manually operate the precycle

Slowly rotate the main shaft until plate 449040K is completely displaced towards the right (fig. 1 & 2)

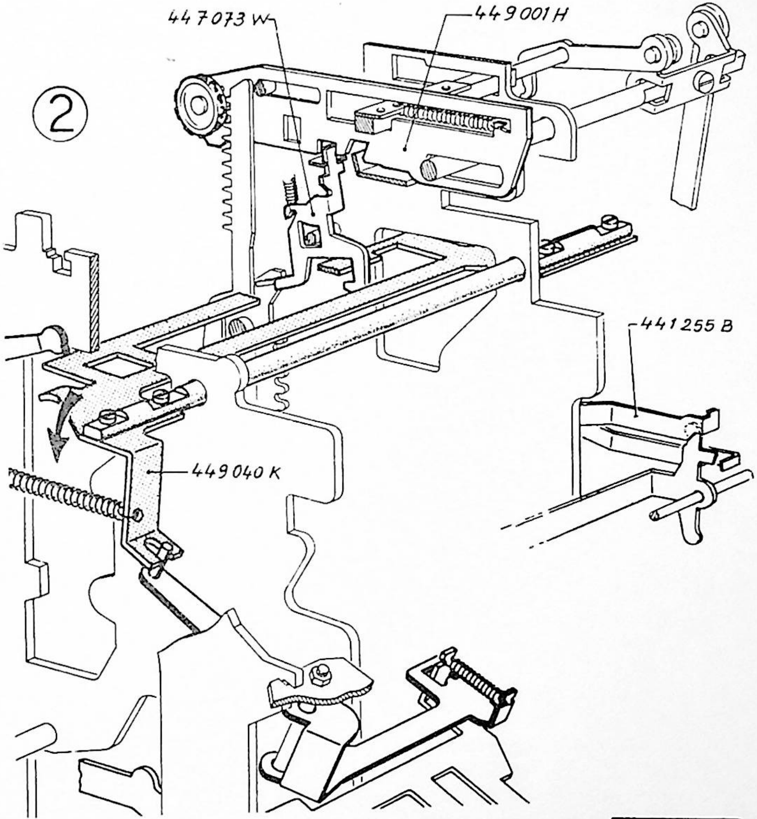
Manually rotate the 449040K (fig. 2) and observe the print latches

The print latches 447073W are free in both up and down directions

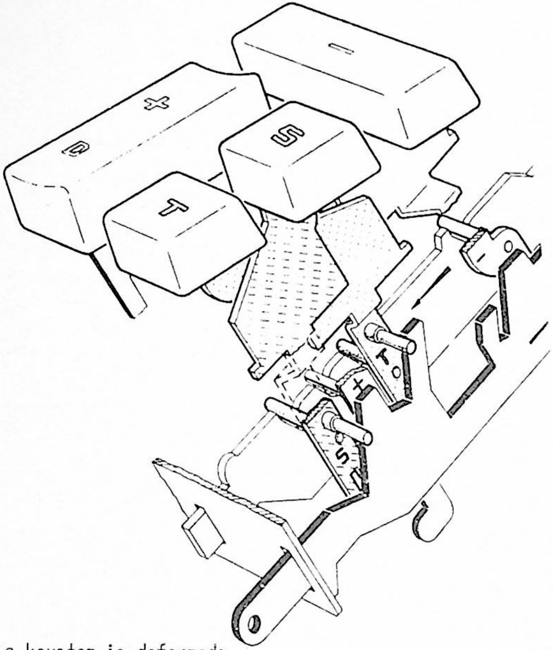
no → Complete the cycle → X5

yes → Complete the cycle → Y12

②



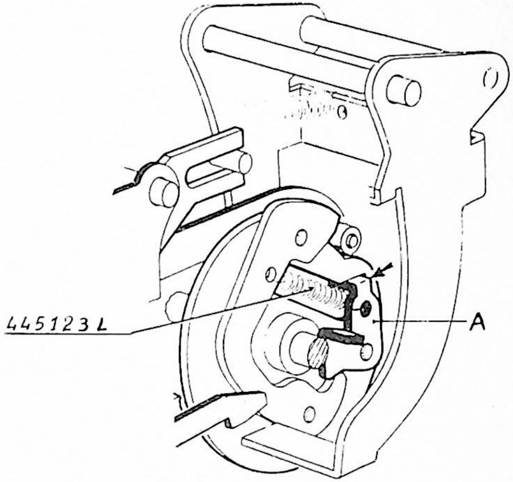
KEY STEMS



If a keystem is deformed:

- Remove the keyboard cover plate and keytop
- Reposition keystem in proper position
- Form to original shape
- Reinstall keytop and keyboard cover plate

CLUTCH DISC PAWL



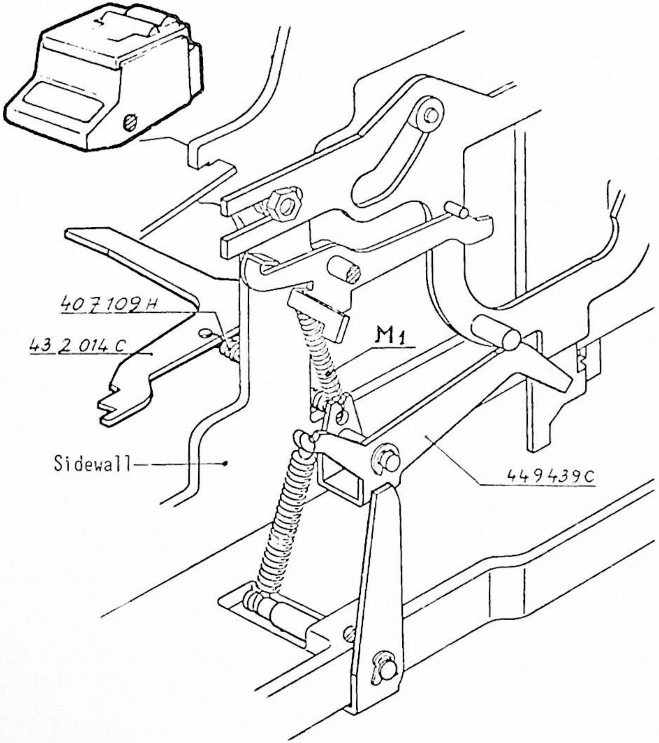
(For MC26 remove bottom pan)

- Enter a digit
- Depress the (NA) key
- Rotate knob until the print is tripped. Now check the freeness of pawl A

- If the pawl is sluggish: clean, lubricate and replace spring if necessary

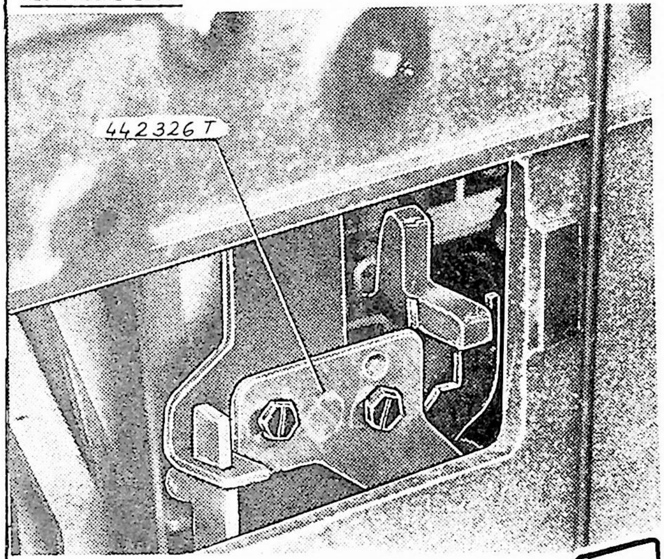
- If pawl is broken: send machine to repair shop

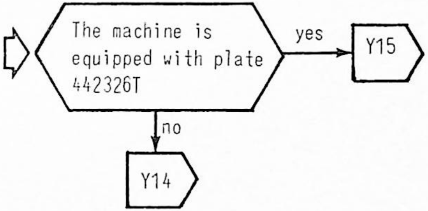
RECIPROCAL LOCK LEVER 432014C

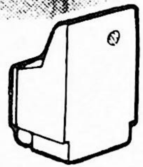


(On the MC24 spring 407109H is hooked to the frame instead of bridge 449439C; whereas spring M1 exists only on the 26/GT)

RECIPROCAL LOCKS



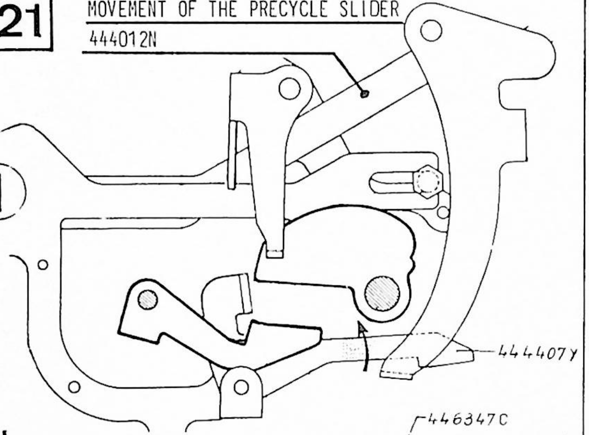




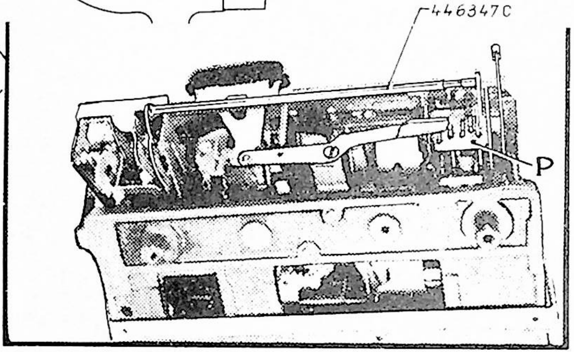
W21

MOVEMENT OF THE PRECYCLE SLIDER

①



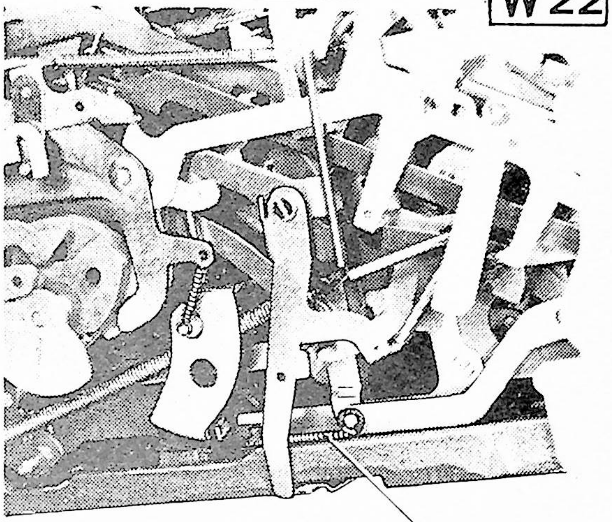
②

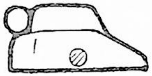


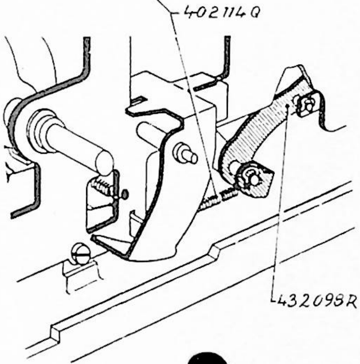
- Rotate latch 444407Y in the direction shown by arrow (fig. 1); and hold it in this position
- Move frame 446347C (fig. 2) and make sure that it returns promptly to rest position
- If necessary clean and lubricate slots of guide comb P

W22

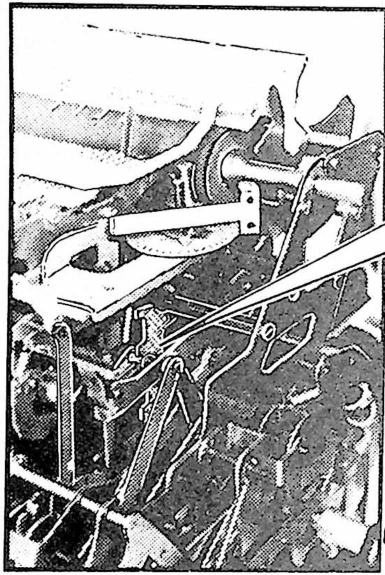
STOP SECTION RESTORING PLUNGER 432098R



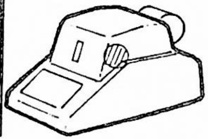




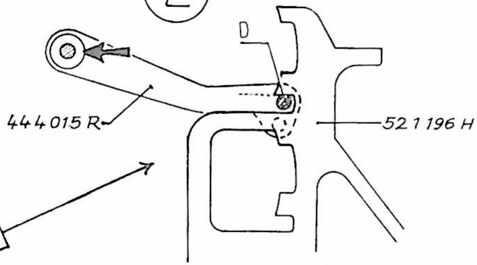
CRANK 444692V



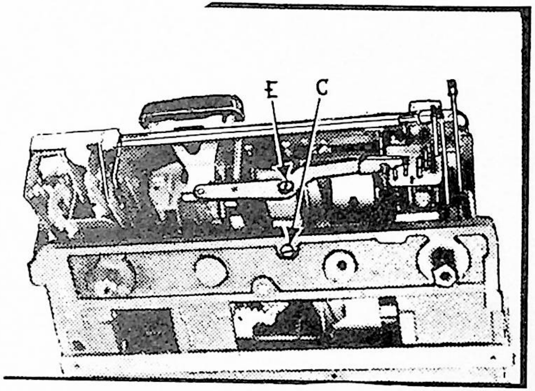
1



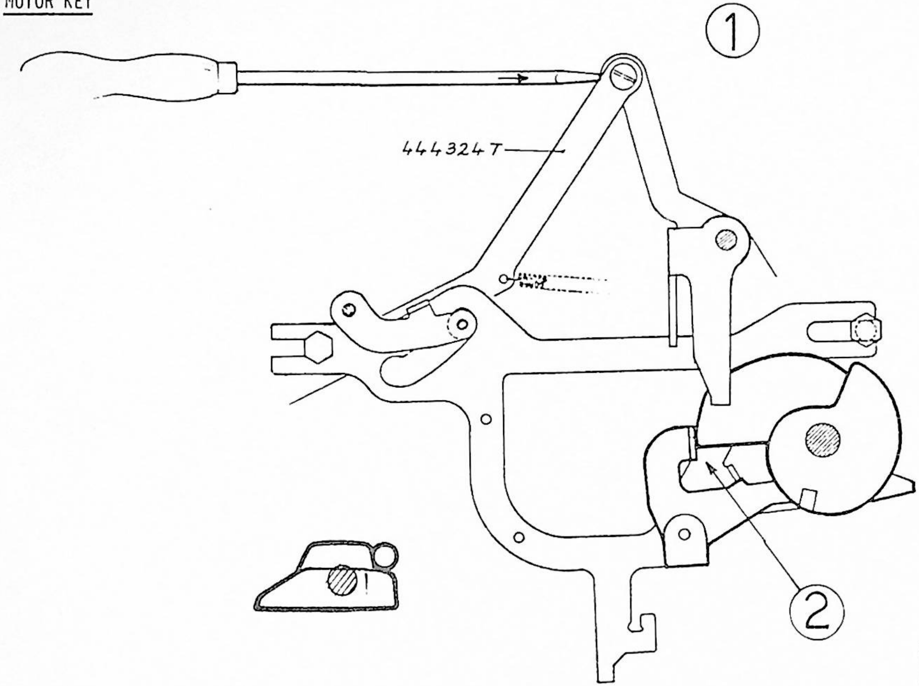
2



3



- Unplug cord
- If stud D is held by plate 521196H (as shown in fig. 2) push crank 444015R towards the front of the machine (acting at the point indicated by the arrow in fig. 2) to free stud P
- For the MC24 tighten fully screws E and C (fig. 3)
- Complete the cycle
- Make inspection ⟶ Y17



With a screwdriver, push slider 444324T in the direction shown by arrow (fig. 1) and complete cycle by hand

- Enter a digit
- Depress the (NA) key
- Rotate main shaft until cam is in the position shown in fig. 2

Move slider 444324T and check that it has freedom of movement

Slider 444324T is free

yes

no

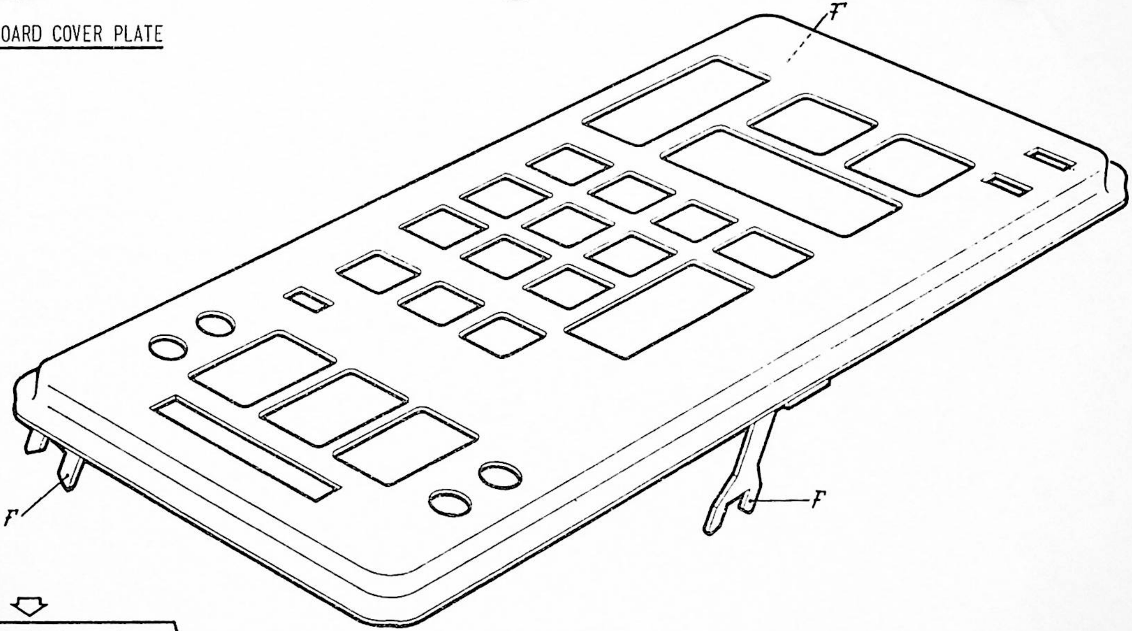
Clean and free at the guide points

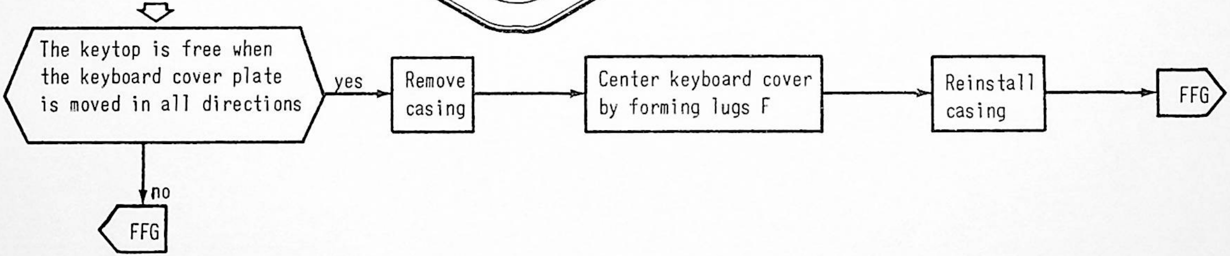
Depress the key that did not return to rest several times and ensure that it returns freely (otherwise free accordingly)

Complete cycle

FFG

MC26 - KEYBOARD COVER PLATE

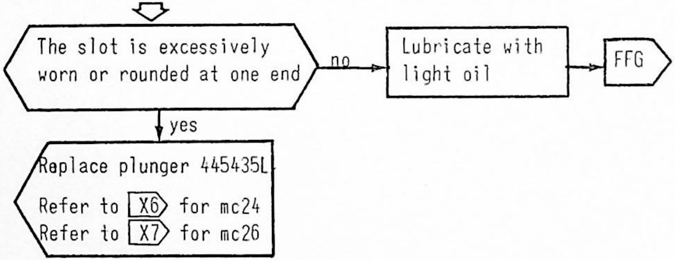



The keytop is free when the keyboard cover plate is moved in all directions
yes
Remove casing
Center keyboard cover by forming lugs F
Reinstall casing
FFG
no
FFG

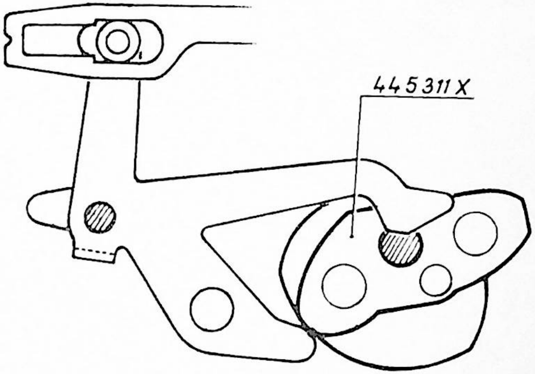
MULTIPLICATION STOP PLUNGER 445435L

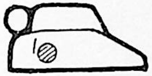
- Unplug cord
- Rotate main shaft until 445054Z is fully rotated rearward (fig. 2) and cam 445311X is in the position shown in fig. 1

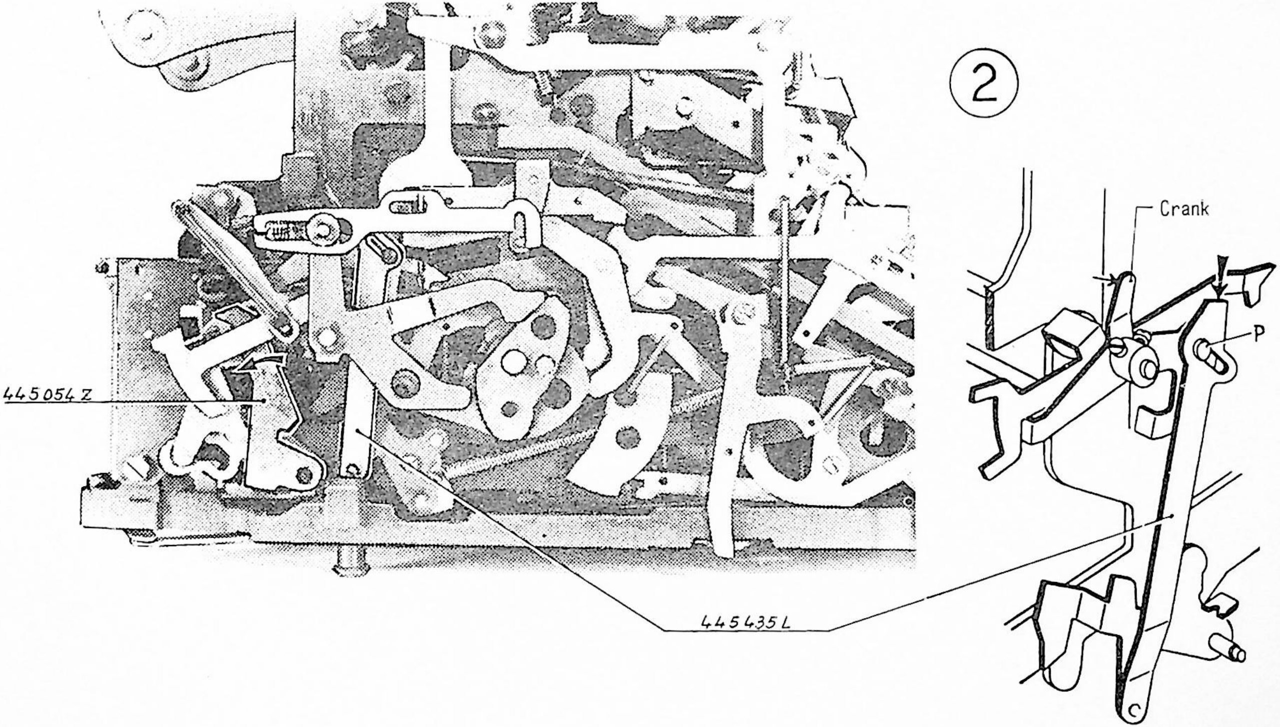
- In this condition, push down plunger 445435L (fig. 2) until the $\boxed{=}$ or ⊜ key returns to rest
- Plug cord in
- Depress twice the black $\boxed{T}$ key
- Depress the $\boxed{X}$ key
- Unplug cord
- Enter 1 and depress the $\boxed{=}$ key
- Rotate main shaft until cam 445311X is as shown in fig. 1
  In this condition, move the crank of plunger 445435L in manner to have stud P free in the slot (fig. 2) (Carefully observe the slot)



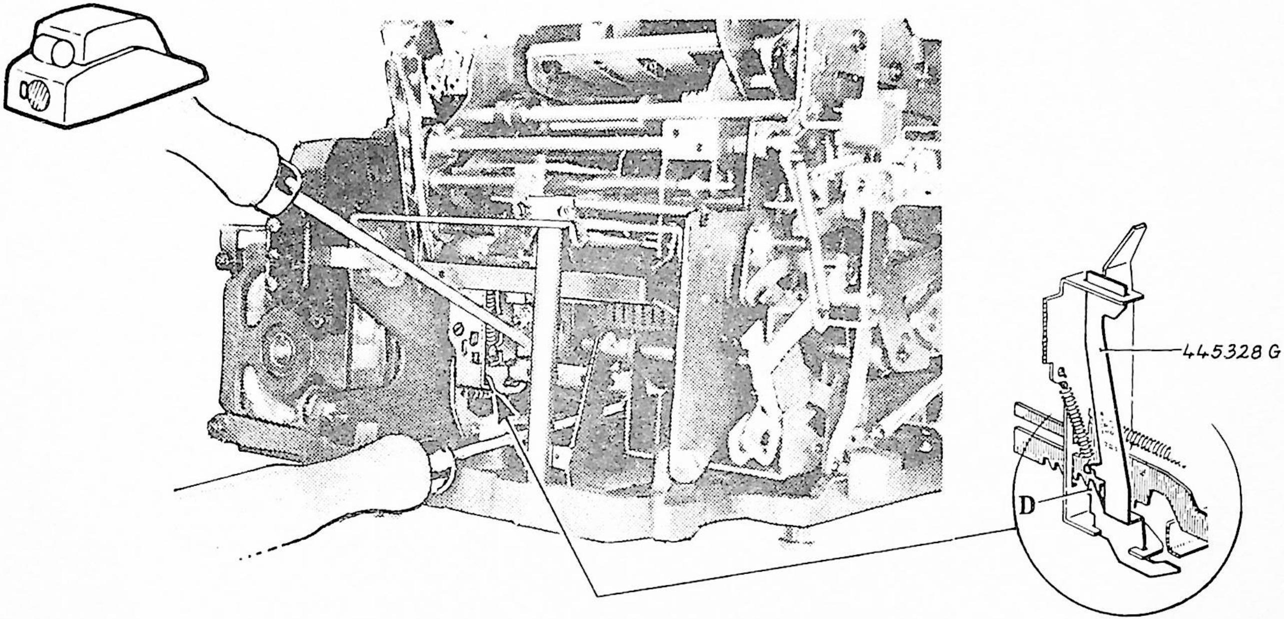
①





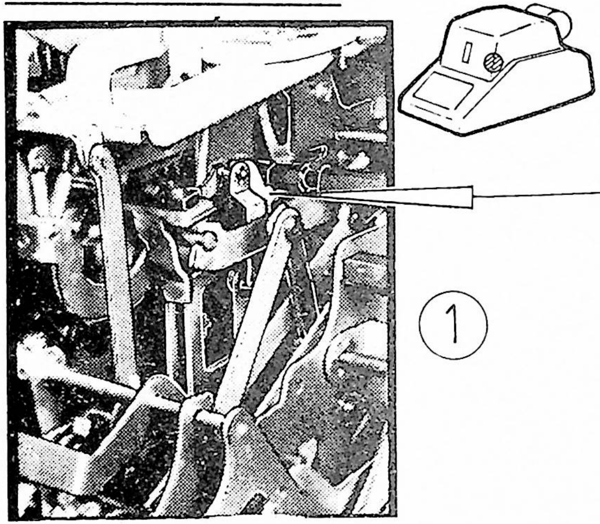

445054 Z
445435 L
②
Crank
P

QUANTITY FEELER LATCH 445328G



If tooth D of latch 445328G is worn, replace it→ X8

REGISTER ENGAGEMENT PLATE 521196H



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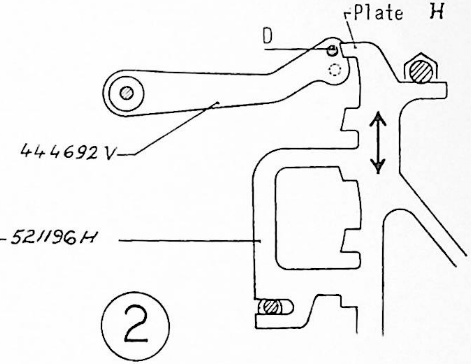

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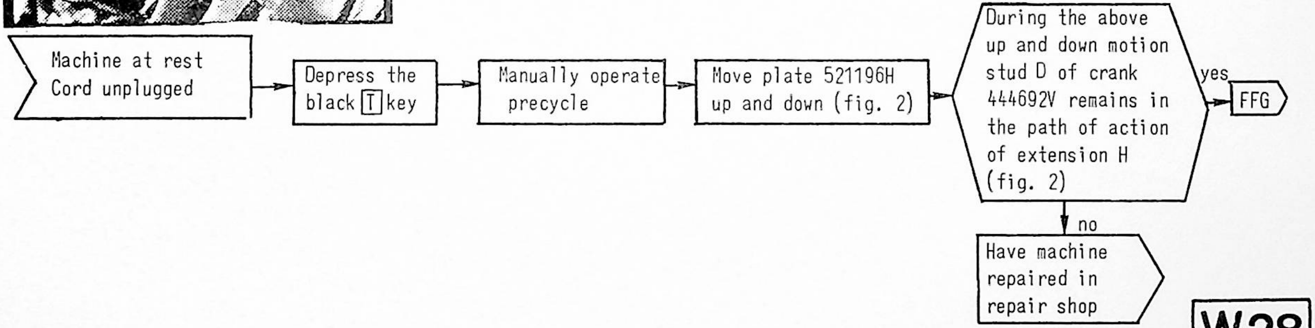
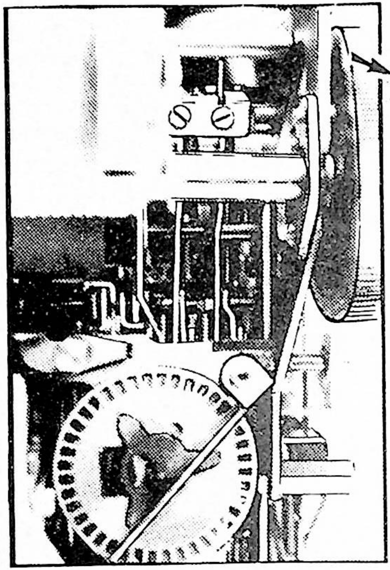
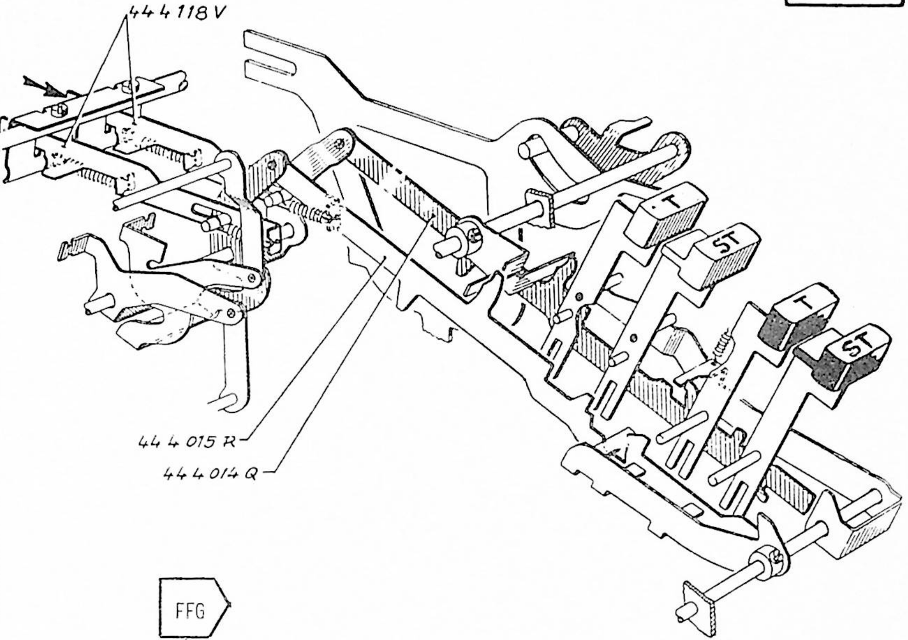
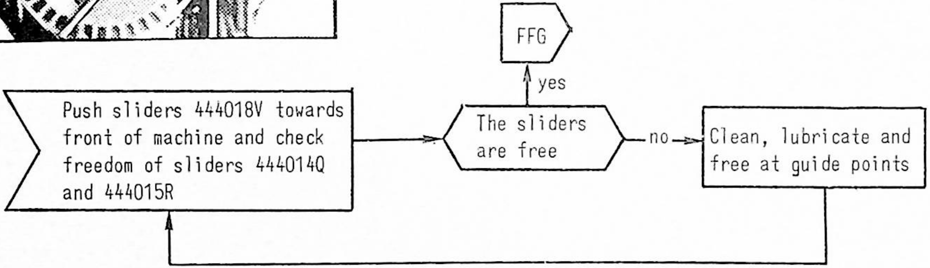

Machine at rest
Cord unplugged
Depress the black T key
Manually operate precycle
Move plate 521196H up and down (fig. 2)
During the above up and down motion stud D of crank 444692V remains in the path of action of extension H (fig. 2)
yes
FFG
no
Have machine repaired in repair shop

CALCULATION SLIDER 444015R







Push sliders 444018V towards front of machine and check freedom of sliders 444014Q and 444015R

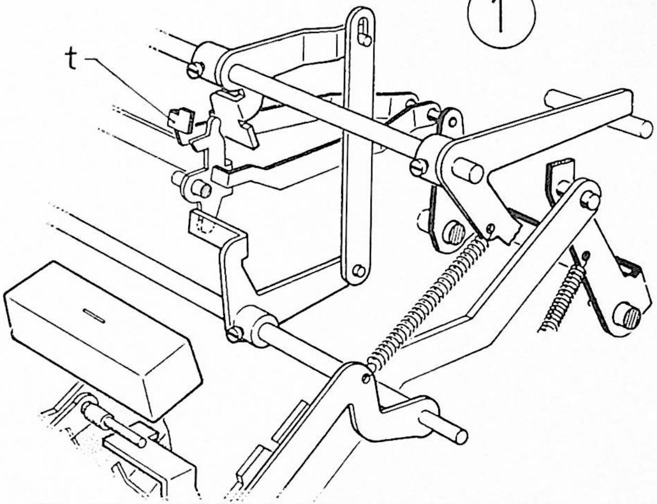
The sliders are free

Clean, lubricate and free at guide points

REGISTER WHEELS

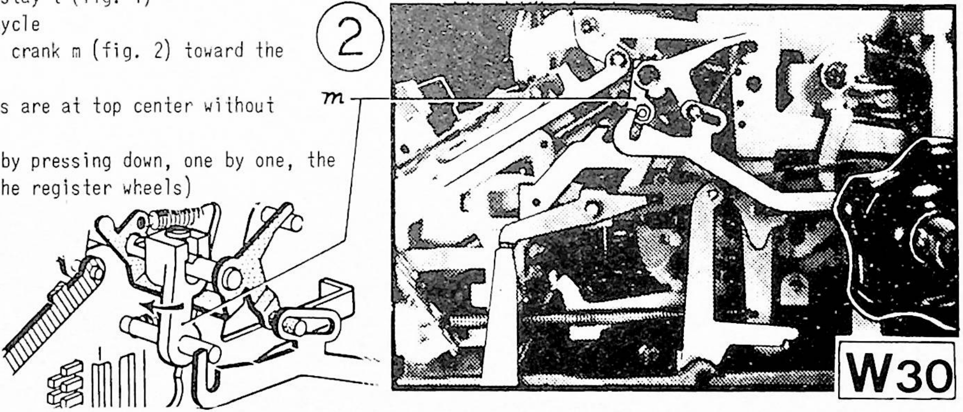
MC24

- Depress the black $\boxed{T}$ key twice
- Unplug cord
- Change position of credit balance stay t (fig. 1)
- Depress the $\boxed{S}$ key and activate the precycle
- Rotate knob until the print racks are at top center without printing
- Check freeness of register wheels by pressing down, one by one, the print racks (If necessary, clean the register wheels)



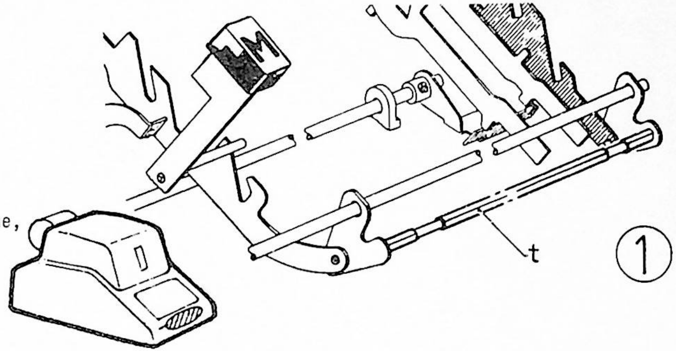
MC26

- Depress the $\boxed{T}$ key twice
- Unplug cord
- Change position of credit balance stay t (fig. 1)
- Depress the $\boxed{S}$ key and operate precycle
- Rotate knob about 90°, then rotate crank m (fig. 2) toward the front and hold in this position
- Rotate main shaft until print racks are at top center without tripping the print sliders
- Check freeness of register wheels by pressing down, one by one, the print racks (If necessary, clean the register wheels)



MC24

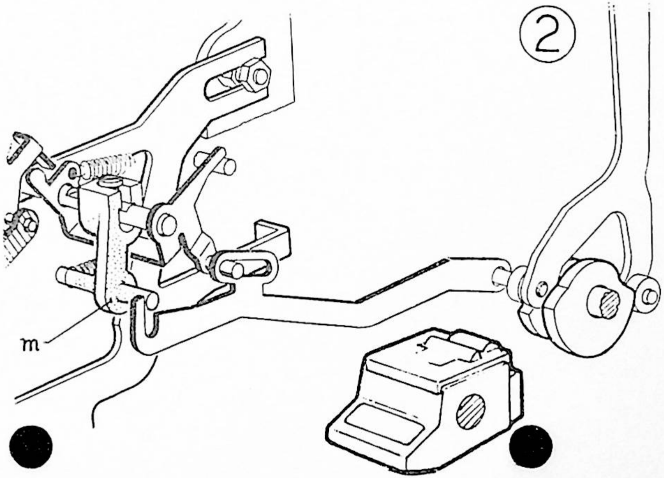
- Machine at rest - cord unplugged
- Lower frame t (fig. 1)
- Depress the (NA) key and manually activate precycle plate
- Rotate knob until the print racks are at top center without printing
- Check freeness of print wheels by pushing down, one by one, the print racks
  (If necessary, clean the print wheels)



①

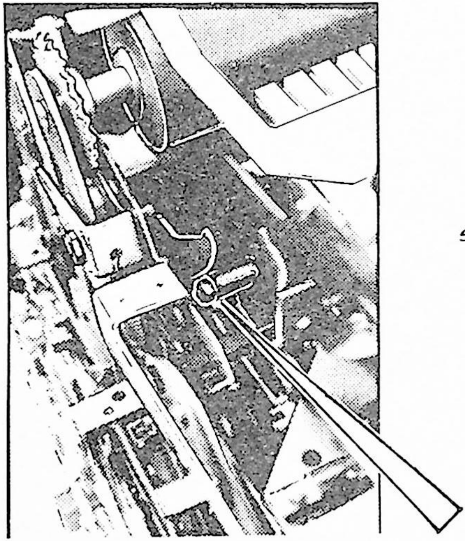
MC26

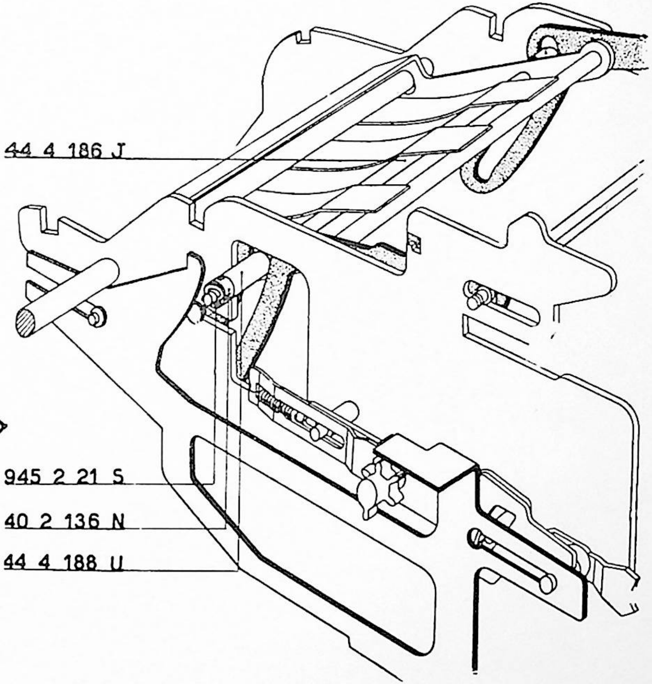
- Machine at rest - cord unplugged
- Press on frame t (fig. 1)
- Depress the $\boxed{\#}$ key and manually activate precycle plate
- Rotate knob about 90^0, then rotate crank m (fig. 2) towards the front and hold in this position
- Rotate knob until all print racks are at top center just before releasing the print sliders
- Check freeness of print wheels by pushing down, one by one, the print racks.
  (If necessary, clean the print wheels)

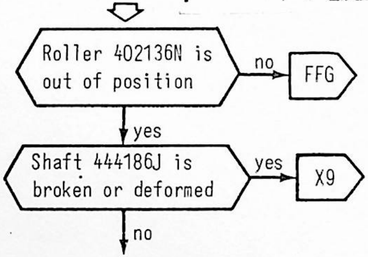


②

MC24 - REGISTER INVERSION PLATE COMMAND ROLLER 402136N

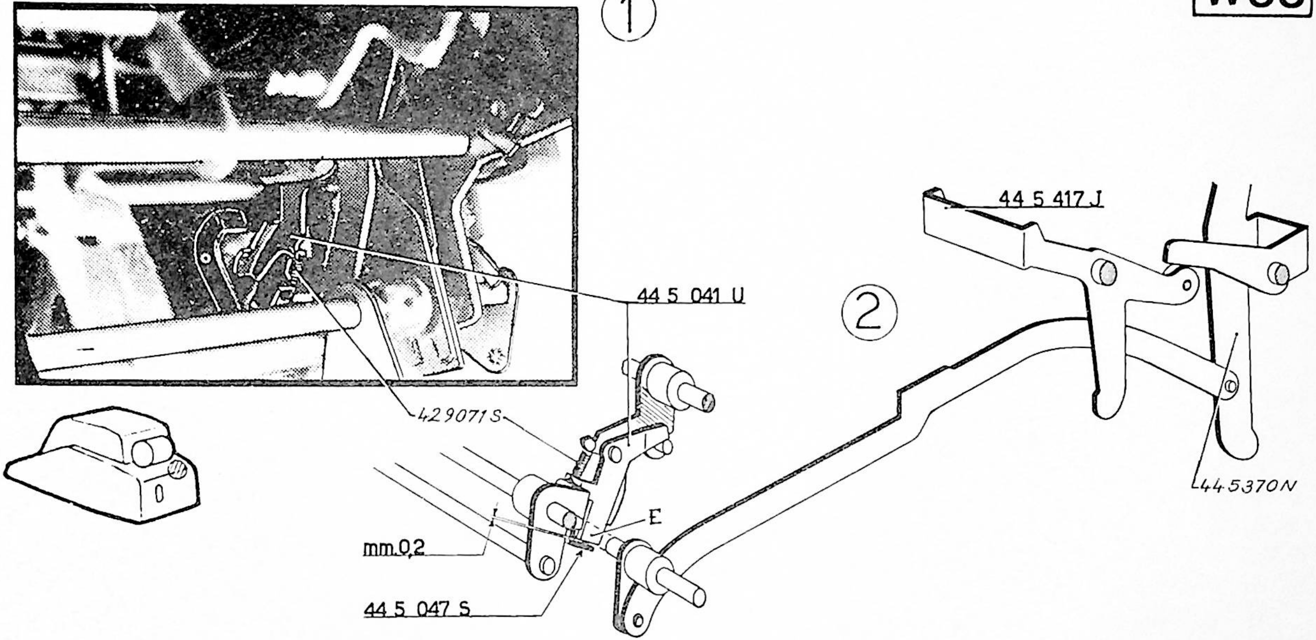





Roller 402136N is out of position
no
FFG
yes
Shaft 444186J is broken or deformed
yes
X9
no

- Check that spacer 444188U is in position
- Install roller and retaining clip

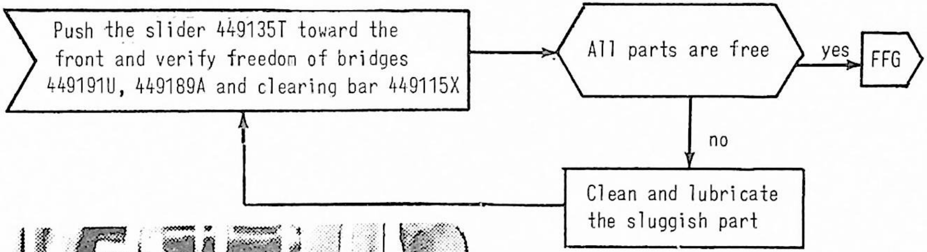
CRANK 445041U



- If the spring 429071S is unhooked, rehook it
- With machine at rest, check that the clearance shown in fig. 2 exists (if not, enter a digit, depress the (NA) key rotate main shaft about 90°, then form the extension of 445370N)
- Complete the cycle and make sure that the clearance is proper (otherwise repeat adjustment)

- Enter a digit, depress the non-add key (NA)
- Rotate main shaft and check that crank 445041U has a good hold on crank 445047S with extension E (fig. 2) (If not, form crank 445041U)

MC26 - SECOND MEMORY CLEAR BAR 449115X



Push the slider 449135T toward the front and verify freedom of bridges 449191U, 449189A and clearing bar 449115X

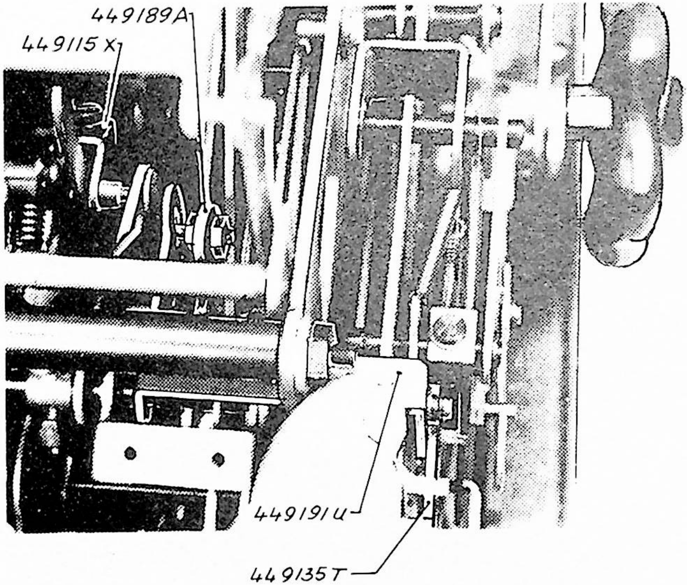
All parts are free

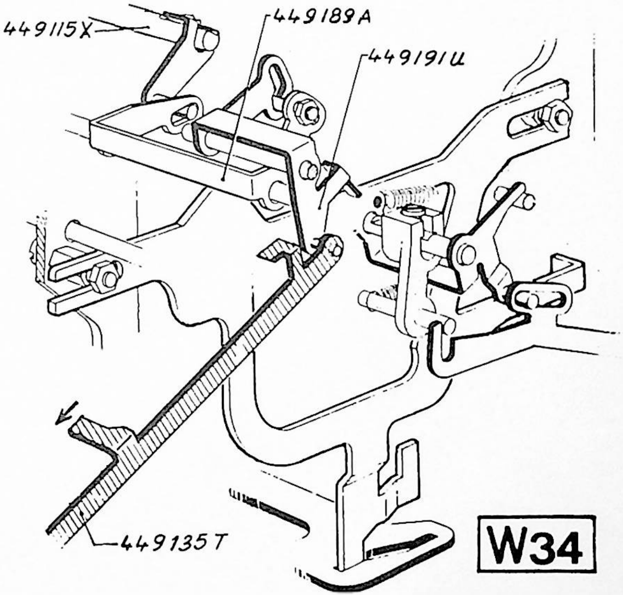
yes

FFG

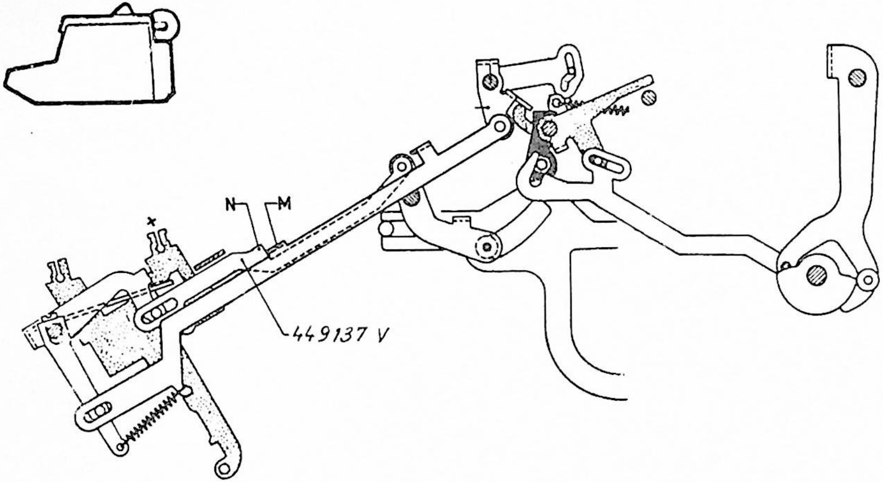
no

Clean and lubricate the sluggish part





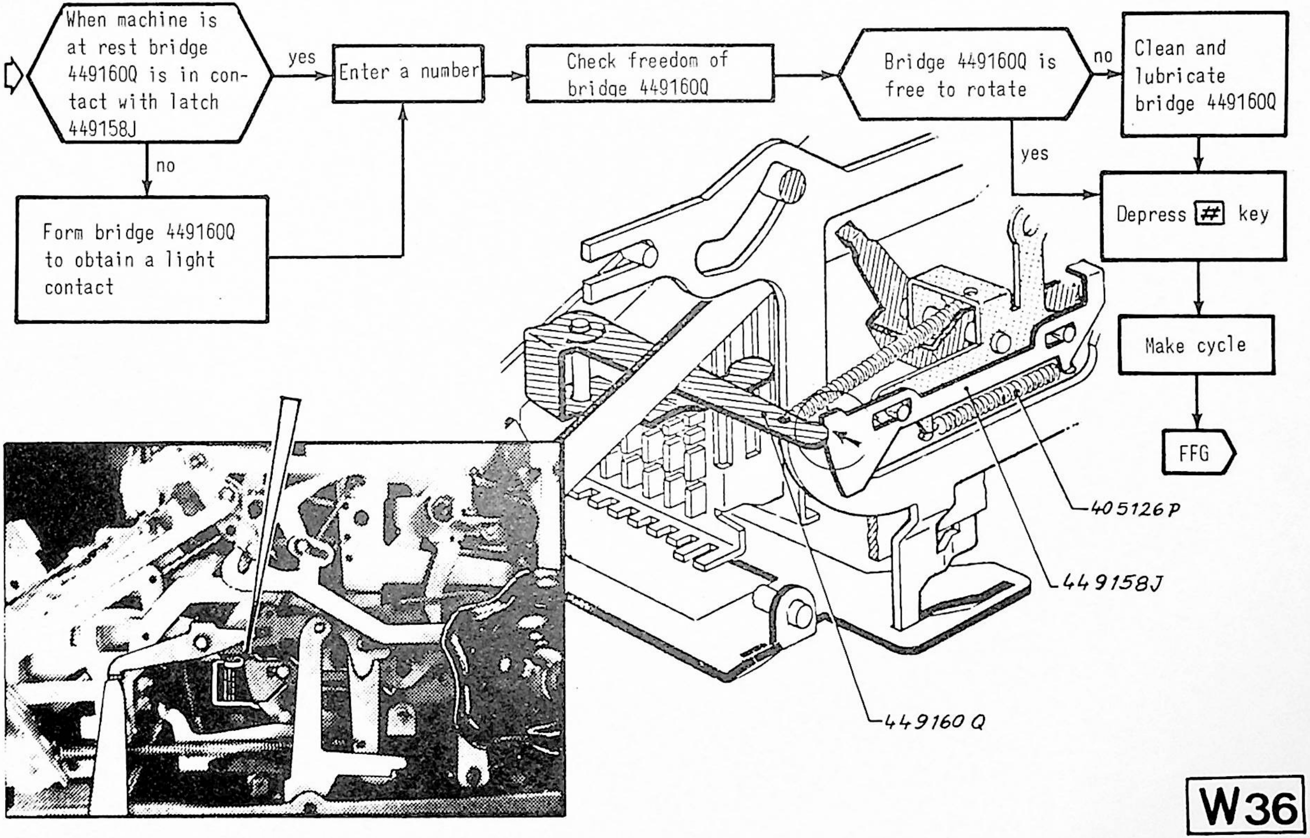
MC26 - SECOND MEMORY DISENGAGING CONTROL WING



- Cord unplugged
- Enter a number; then add it
- Depress the $\boxed{\substack{+\\D}}$ key and activate precycle
- In this condition check that step N of slider 449137V holds the full thickness of wing M (if necessary form wing M)

MC26 - ENTRY CONTROL BRIDGE 449160Q

(Check that spring 405126P is hooked as shown.)


When machine is at rest bridge 449160Q is in contact with latch 449158J
yes
Enter a number
Check freedom of bridge 449160Q
Bridge 449160Q is free to rotate
no
Clean and lubricate bridge 449160Q
yes
Depress # key
Make cycle
FFG
no
Form bridge 449160Q to obtain a light contact
405126P
449158J
449160Q

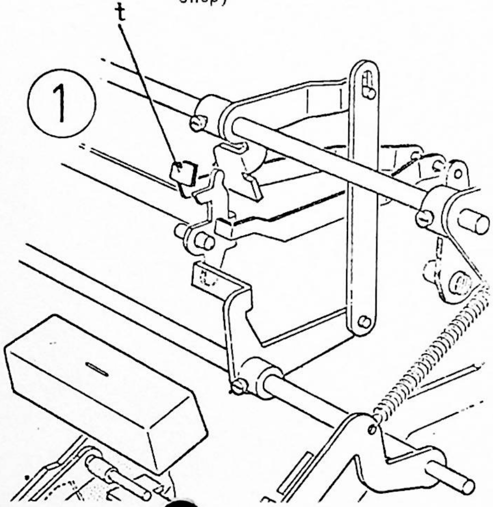
MC26 - SECOND MEMORY WHEEL

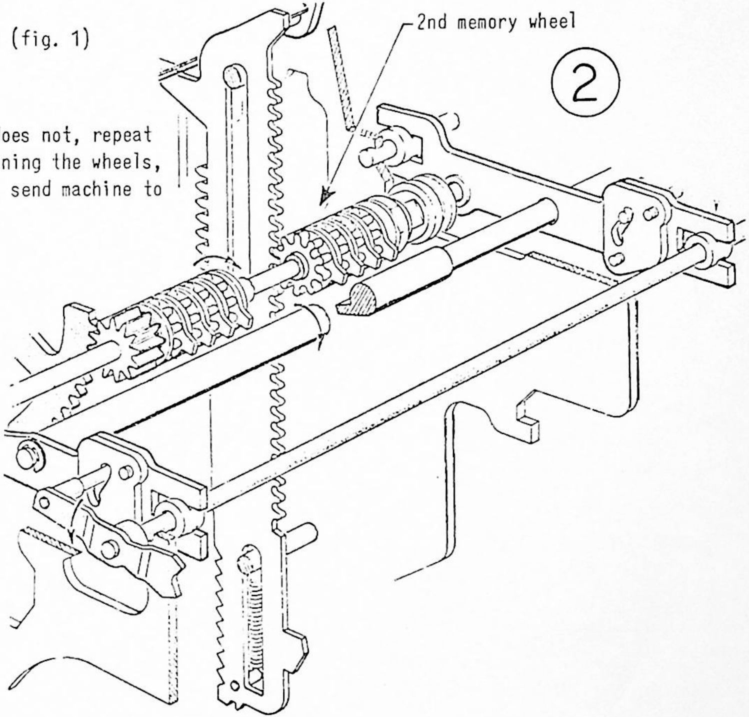
- Clean the second memory wheels

Then:

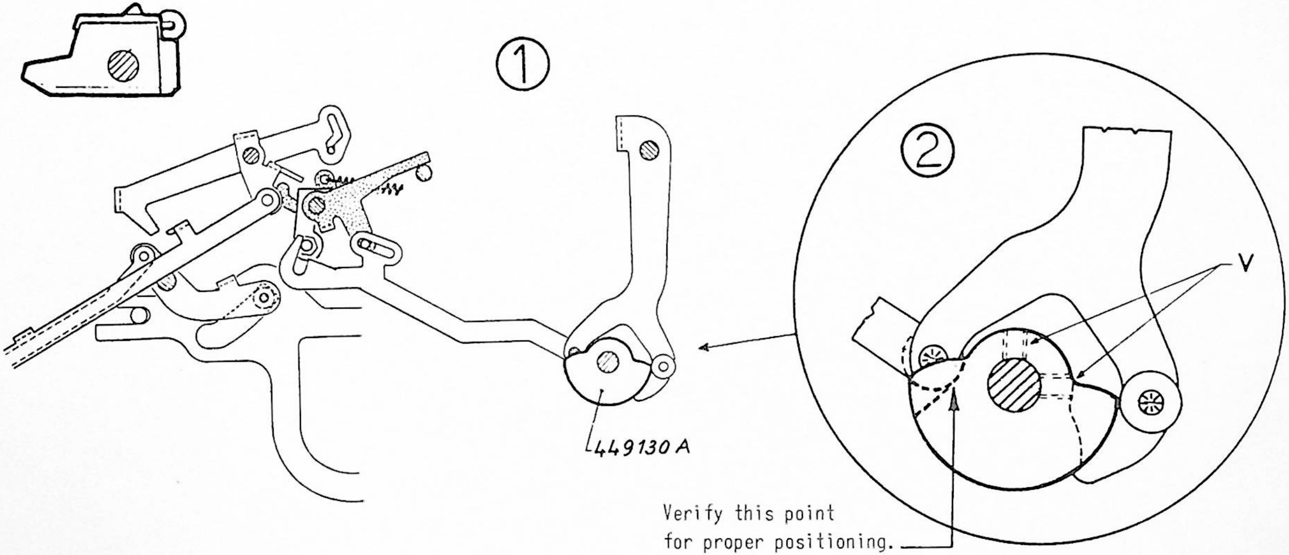
- Plug cord in
- Depress the $\boxed{T}$ key
- Change position of credit balance stay t (fig. 1)
- Depress the $\boxed{T}$ key
- Depress the $\boxed{\overset{+}{D}}$ key

(The machine must print all 9's; if it does not, repeat clean and test. If after carefully cleaning the wheels, the condition requested is not obtained, send machine to shop)


①


②

SECOND MEMORY ENGAGEMENT AND DISENGAGEMENT CAM 449130A

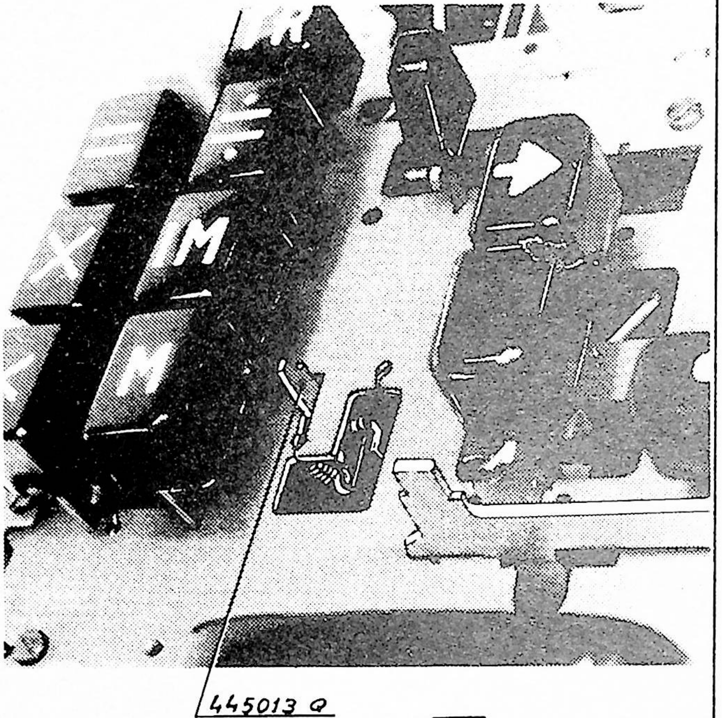


Verify this point for proper positioning.

- Ensure that cam 449130A is set as shown in fig. 1 and 2; if not, loosen screws V, reset it properly as shown in fig. 2, then tighten fully screws V

W39

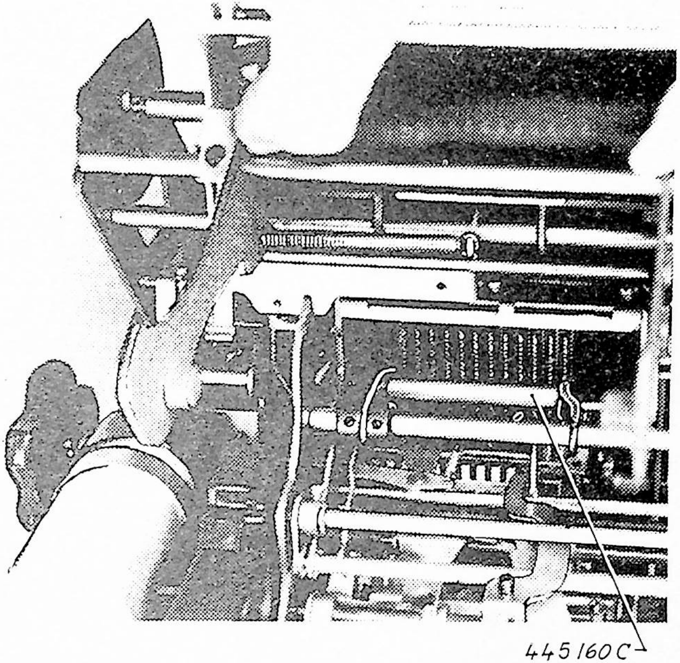
MC24 - IM KEY LATCH 445013Q



Key latch 445013Q is broken → X10

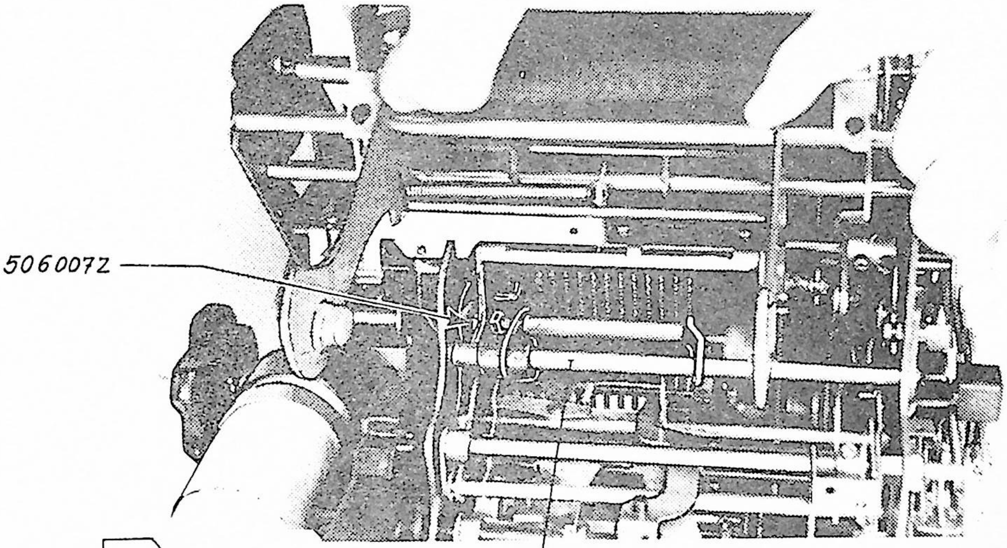
W40

MC24 - MEMORY CLEARING BAIL 445160C



Memory clearing bail is broken → X11

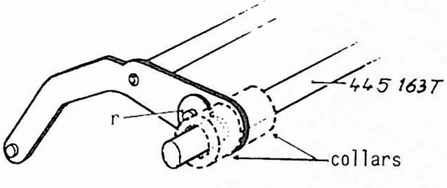
MEMORY RACKS POSITION DETENTS BAIL ADJUSTING SCREW 506007Z

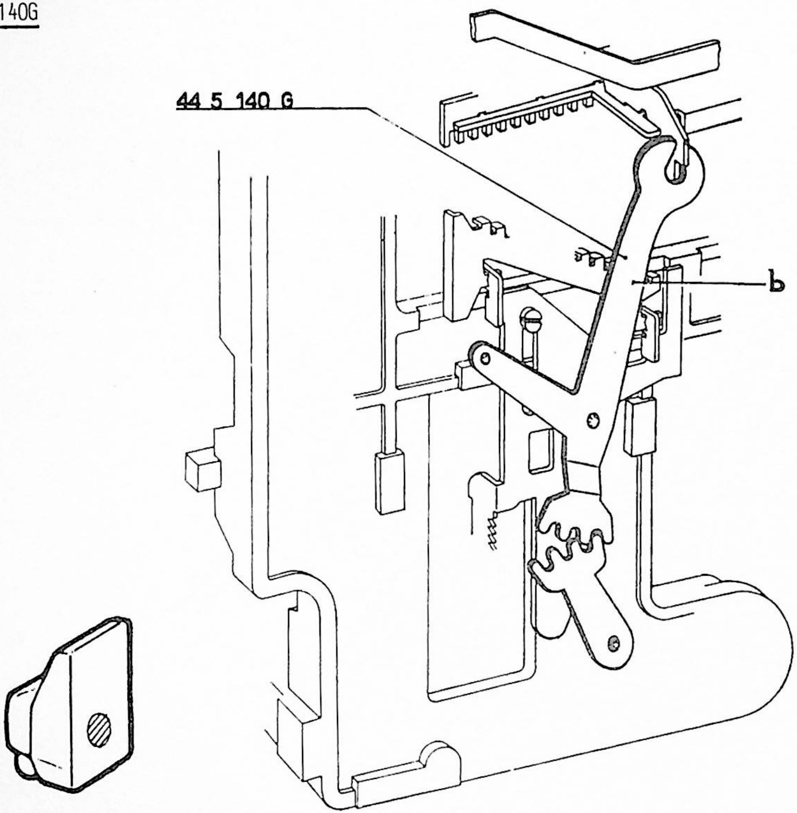


Screw 506007Z is broken → X12

Screw 506007Z is loose:

- Remove shaft 445163T
- Remove retainer clip (for the MC26, unhook springs hooked to ends of shaft)
- According to the type of machine, remove either the washer "r" or two collars
- Follow inspection Y34

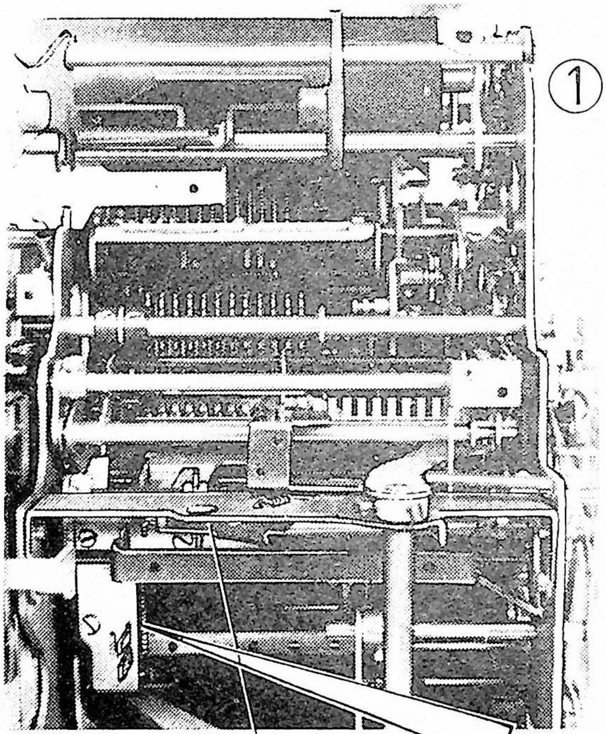




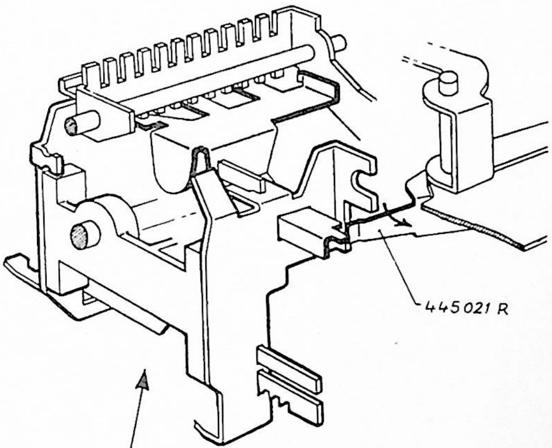
If arm 445140G is out of position; install properly, then form arm b to avoid same fault

MULTIPLIER UNIT

①



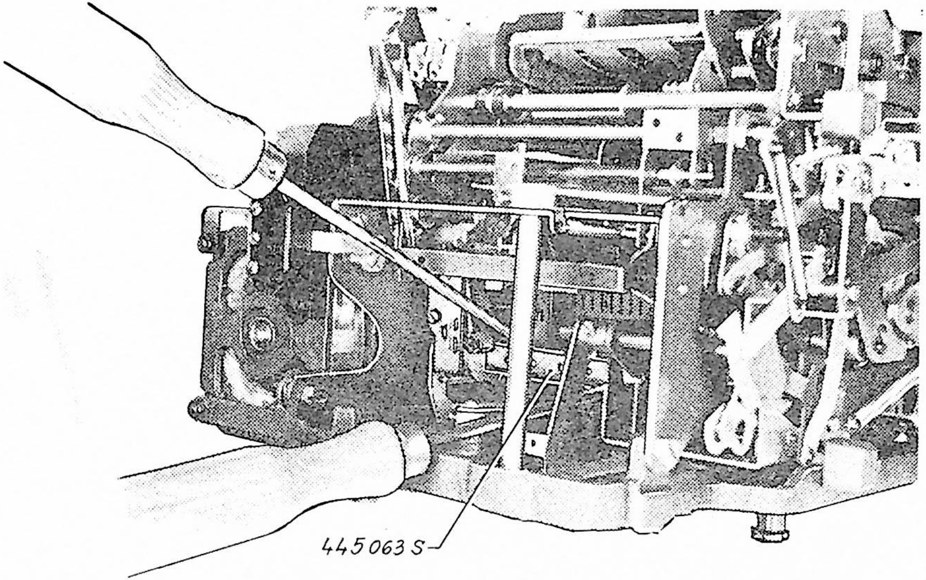
②



MULTIPLIER UNIT

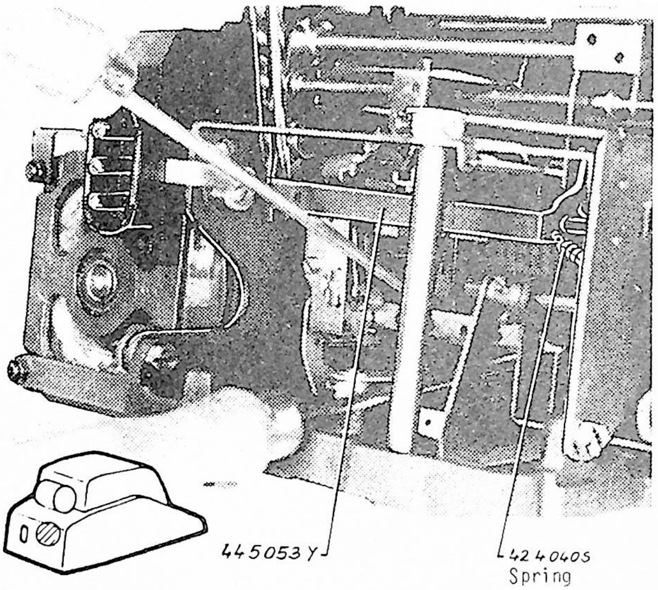
- Enter twelve digits
- Unhook latch 445021R (fig. 1 & 2) of the multiplier unit
- Check freedom by manually sliding it back and forth
  (If sluggish, clean and lubricate the multiplier unit guide and bearing shafts)

STROKE COUNTER BRIDGE 445063S



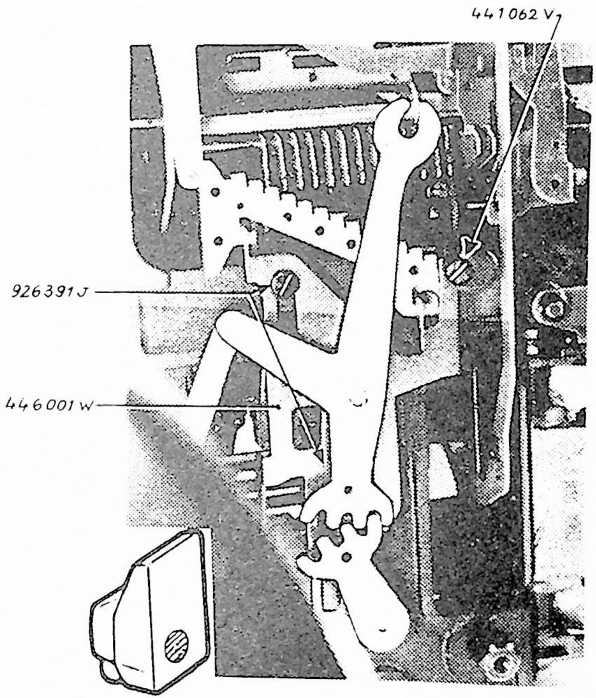
If the stroke counter bridge 445063S is deformed: use two screwdrivers as illustrated to make it horizontal

SUBTRACTION STOP EXCLUSION BRIDGE 445053Y



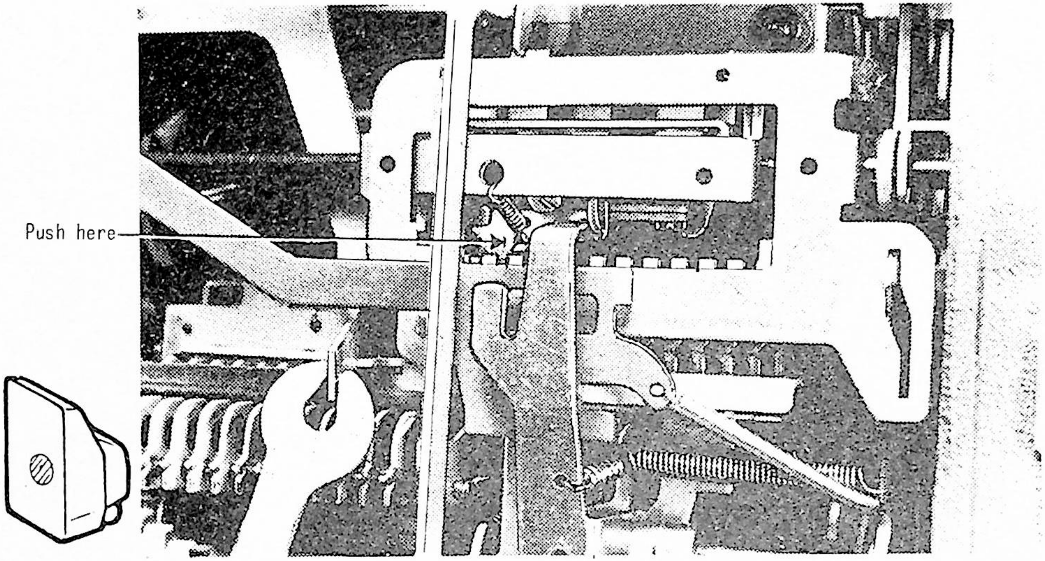
- Bridge 445063S is broken: → X13

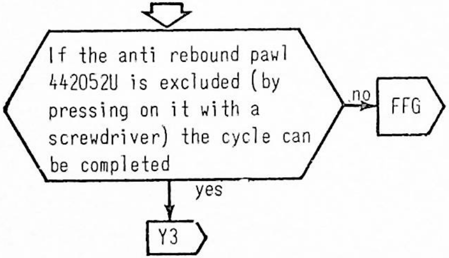
TABULATION CONTROL SUPPORT PLATE 446001W



- Remove bottom pan
- If screws 926391J and 441062V are loose, tighten them fully
- Install bottom pan

STOP SECTION ANTI REBOUND PAWL 442052U



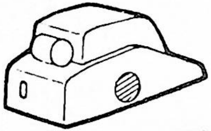


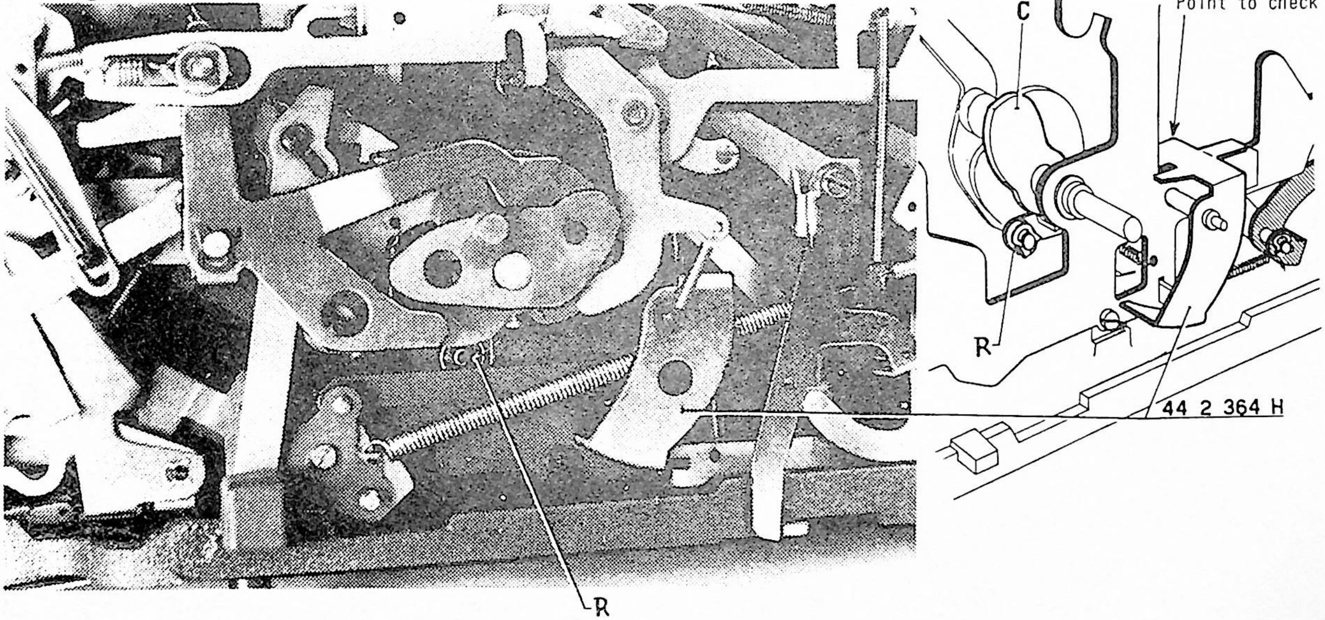
If the anti rebound pawl 442052U is excluded (by pressing on it with a screwdriver) the cycle can be completed

no → FFG

yes → Y3

STOP SECTION RESTORING BRIDGE 442364H

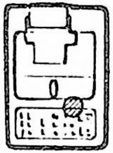


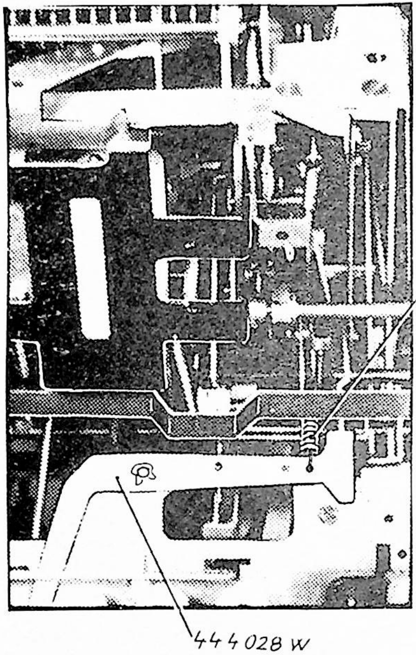


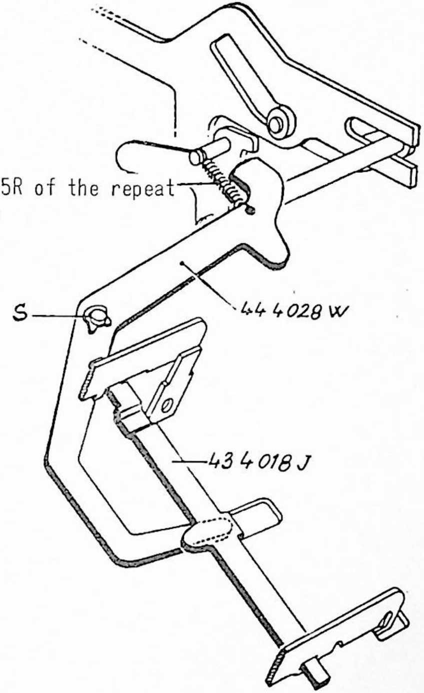
- If bridge 442364H shows a hair-line crack at the point shown in fig. 2: send machine to shop

- If roller R is not centered laterally in respect to profile of cam C: center it by forming the arm, on which it is installed, with a screwdriver

MC24 - REPEAT RETURN LEVER 444028W







If lever 444028W is out of position 434018J return to position and check that retainer clip S is properly installed

MC26 - STOP SECTION RESTORING PLUNGER 432098R

- Machine at rest
- Cord unplugged

Enter twelve digits

Move bridge B (fig 1) and check that plunger 432098R overlaps wing A by at least the thicknes of the latter

Plunger 432098R overlaps wing A

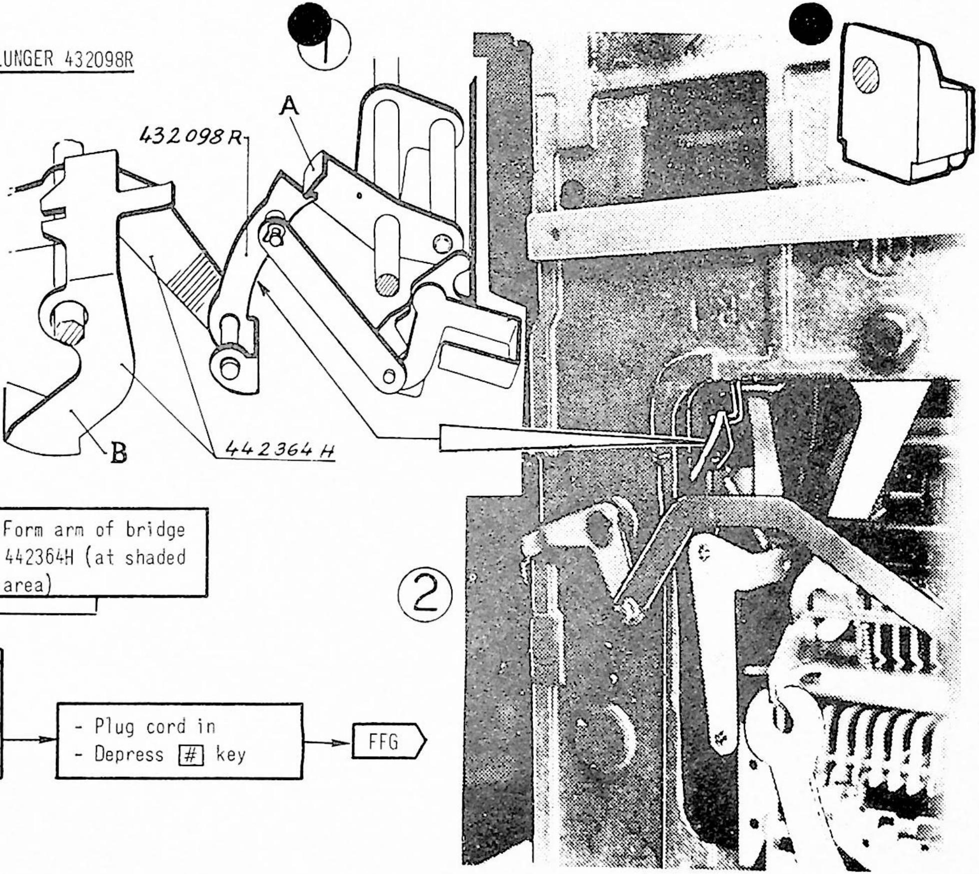
no → Form arm of bridge 442364H (at shaded area)

yes

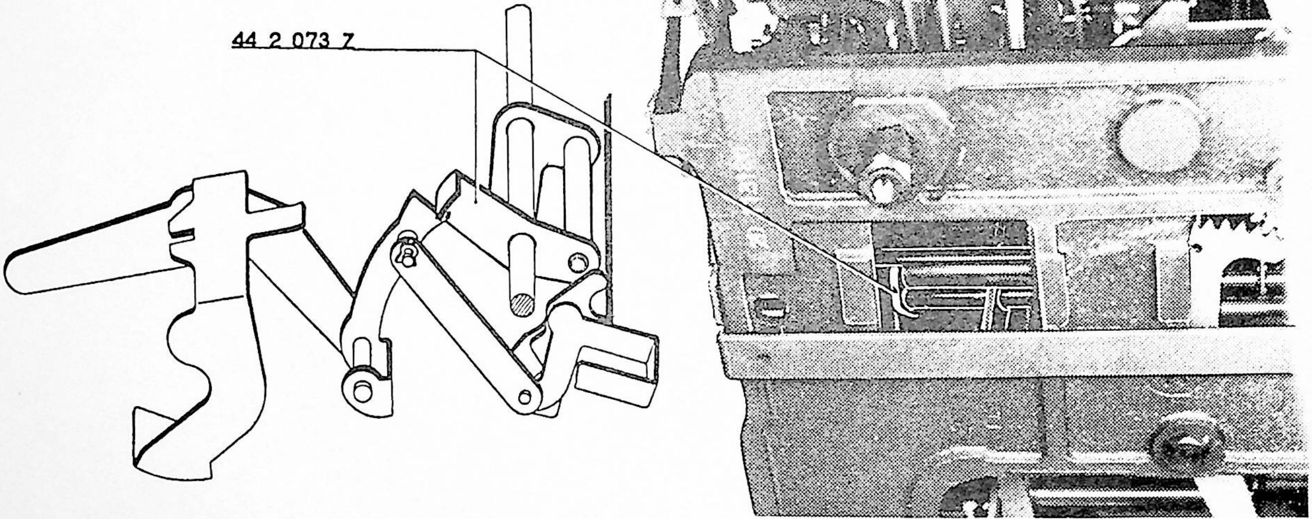
Move plunger 432098R rearward (fig. 1) and check that all parts connected to it are free (if not, clean, lubricate and free)

- Plug cord in
- Depress [#] key

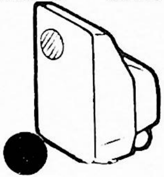
FFG



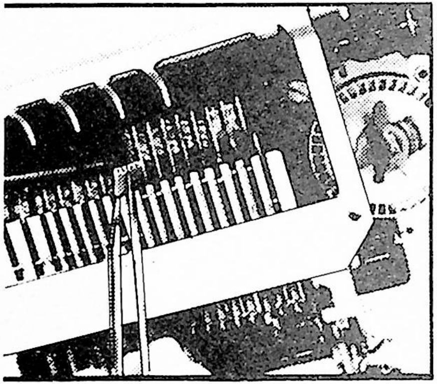
MC24 - STOP SECTION RESTORING FRAME 442073Z



Frame 442073Z is broken: → X14

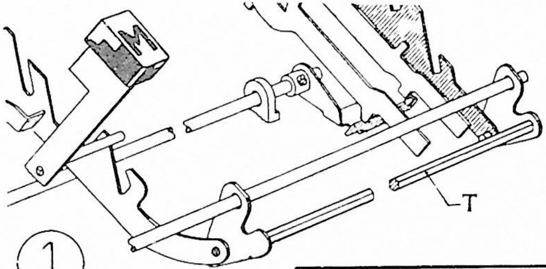


MC24 - Print Wheel Rivet



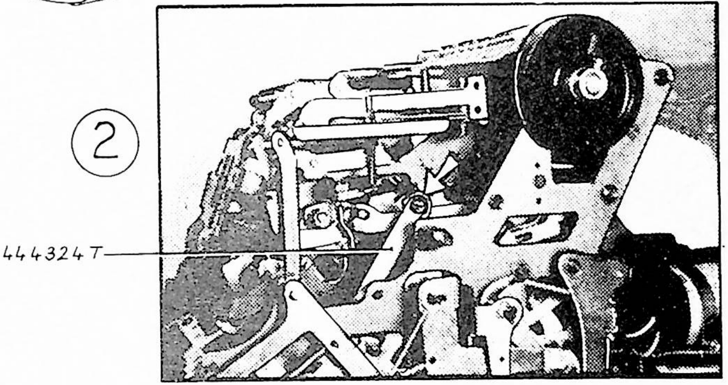
If the print wheel rivet is broken or binding, replace print slider → X15

PRINT SLIDER



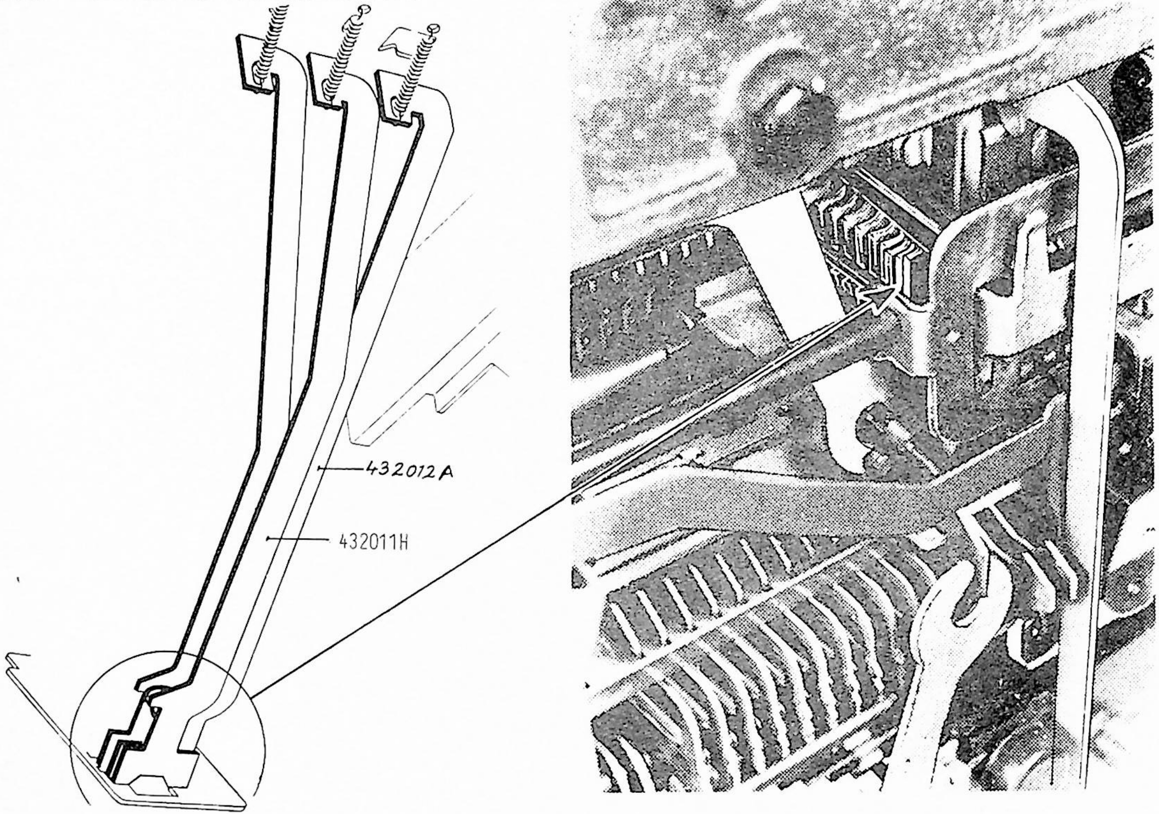
①

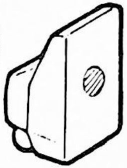
②



- Machine at rest
- Press on frame t (fig. 1)
- Press at point shown by arrow (fig. 2) on slider 444324T, then activate precycle
- Rotate main shaft until printing is tripped
- Check that all print sliders are free and have hit the platen (If not, clean and lubricate the print sliders at points of friction)

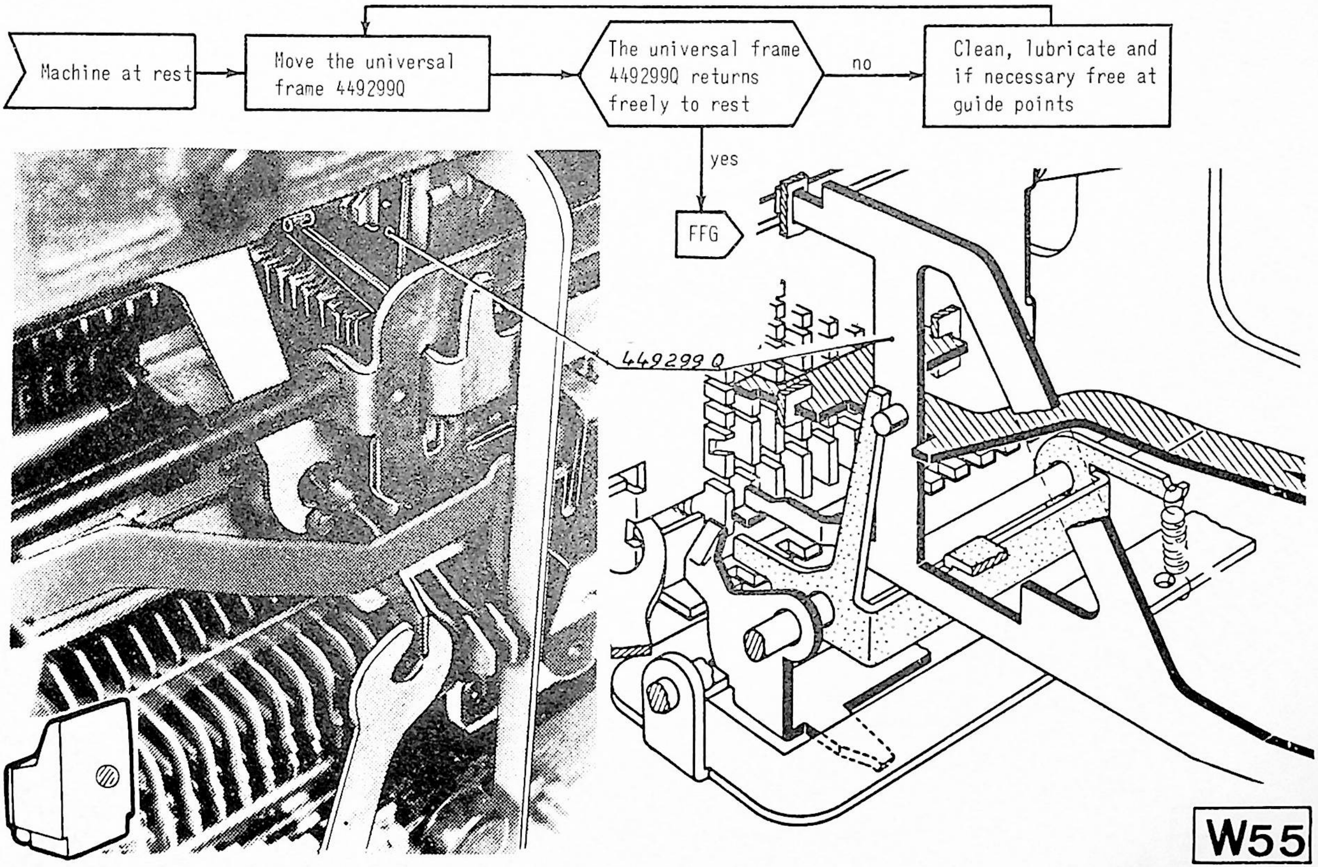
MC24 - DOUBLE AND TRIPLE ZERO KEY STEMS



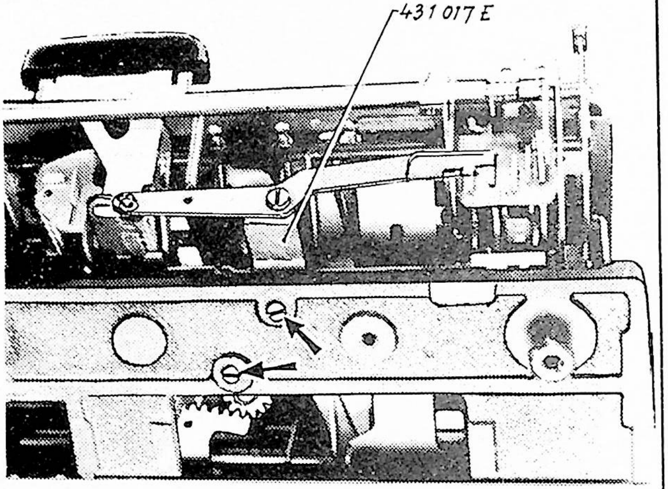


If the double zero key stem 432011H also drags the triple zero key stem 432012A: clean and lubricate the two key stems at their guide points

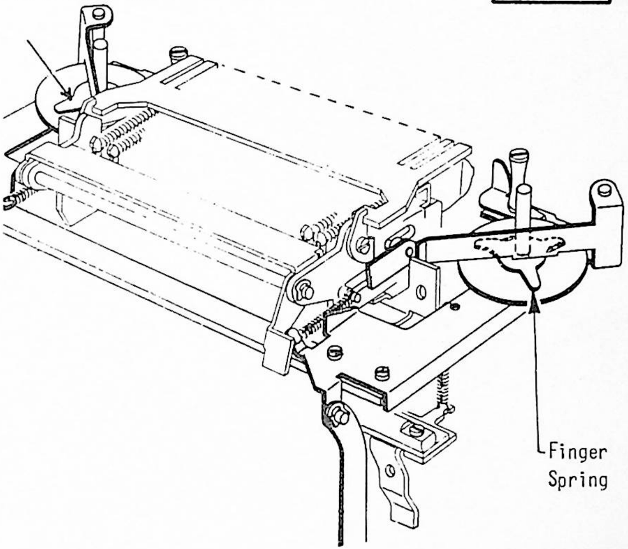
MC26 - KEYBOARD UNIVERSAL FRAME 449299Q


Machine at rest
Move the universal frame 449299Q
The universal frame 449299Q returns freely to rest
no
Clean, lubricate and if necessary free at guide points
yes
FFG
449299Q

MC24 - COLUMN INDICATOR DRUM BRACKET 431017E



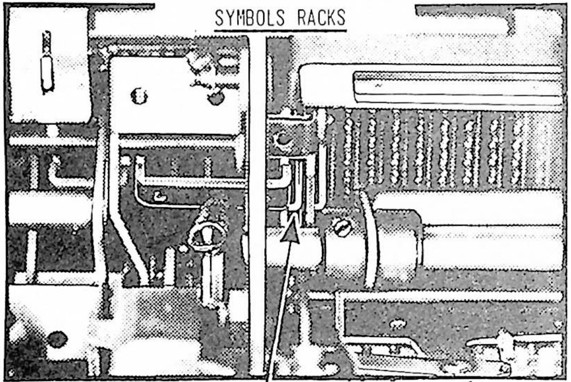
RIBBON SPOOLS CARRIER

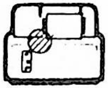


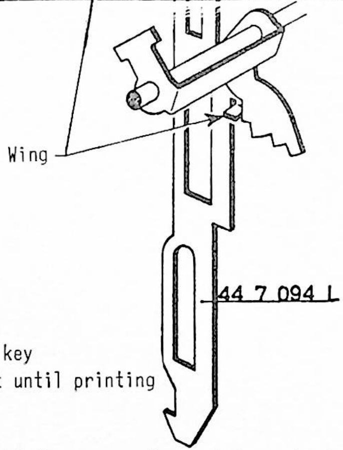
- If ribbon is slack; increase tension by forming the fingers of the springs to increase pressure on the disc

- If ribbon tends to slip off of proper guides; act on the lips or guide rollers

SYMBOLS RACKS



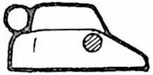


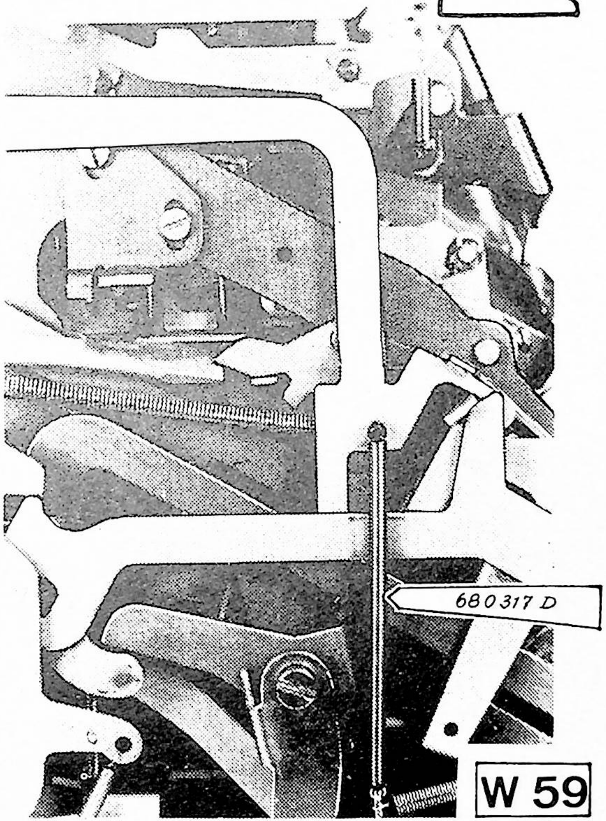


- Depress non add key
- Rotate mainshaft until printing takes place

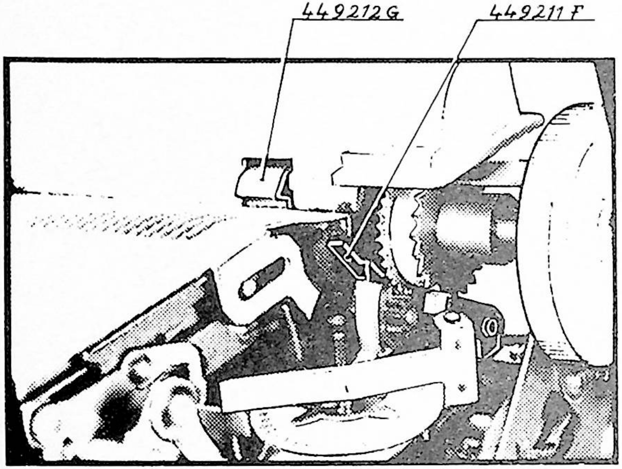
- If the wing on the symbols racks is broken: send machine to shop

MC24 - DOUBLE LINESPACE LEVER

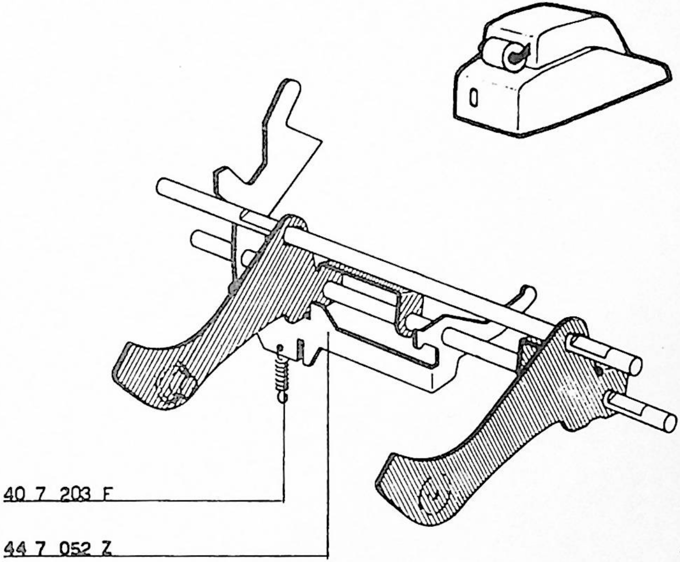




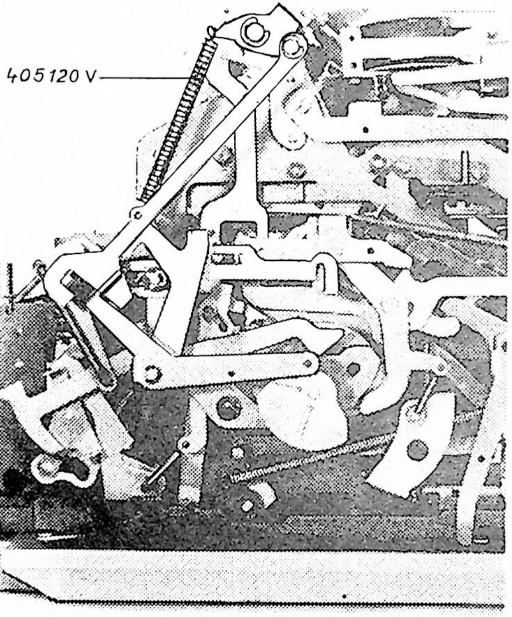
MC26 - PAPER SENSOR BRIDGE

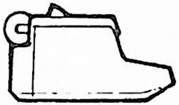


MC24 - PAPER RELEASE BRIDGE 447052Z

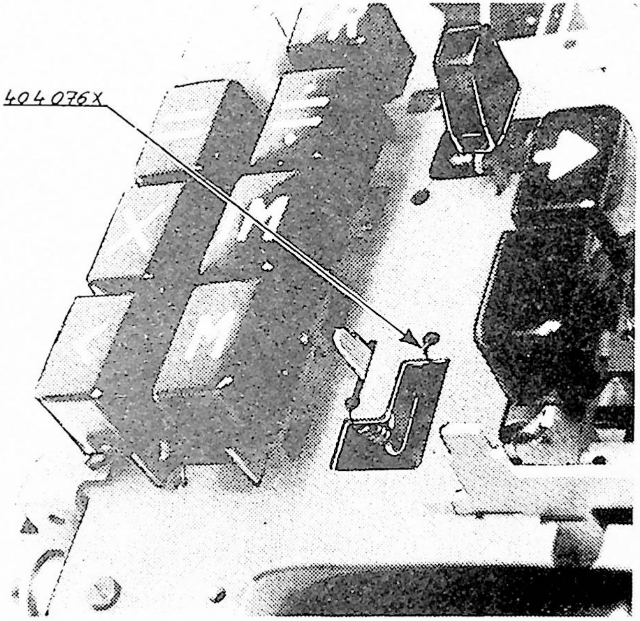


MC26 - DOUBLE SPACE PLATEN RETURN SPRING 405120V

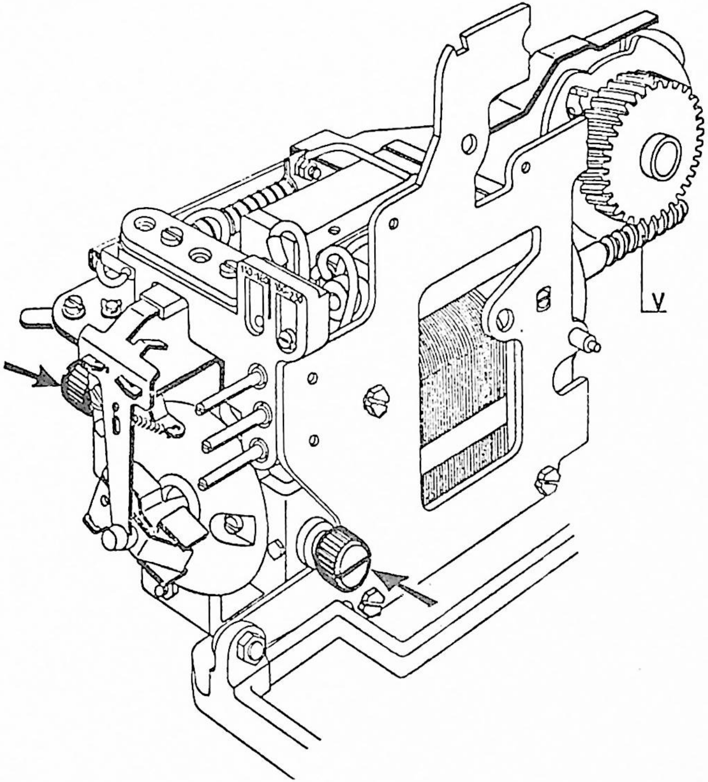




MC24 - SPRING 404076X OF DATE SLIDER



MC24 - BRUSH MOTOR



Free brushes in guides. If motor does not start: replace

VOLTAGE SELECTOR - CONTACT POINTS

Voltage Selector

- If the voltage selector is as the one shown in fig. 1: screw V must be screwed in the side that corresponds to the line voltage
- If the voltage selector is as the one shown in fig. 2: black B which has two possible positions, must be inserted in a manner that the voltage rating that is visible must correspond to the line voltage

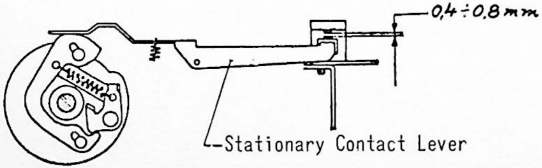
---

Contact Points

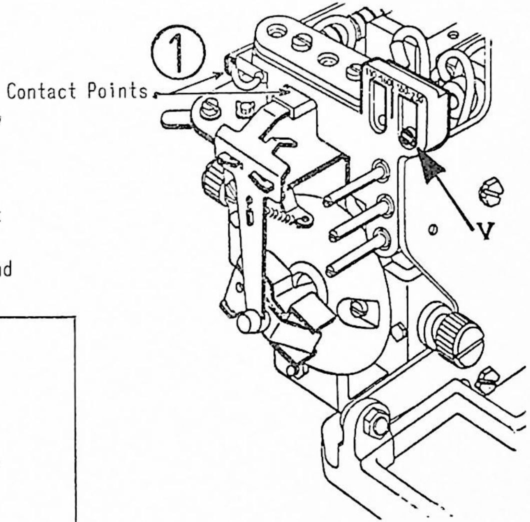
- If the points are pitted:
  - Unplug cord
  - Depress the $\boxed{\text{T}}$ key, then clean all contact points with fine contact file or abrasive paper

Adjustment of Contact Points

- With points open (at rest) they must have a clearance of 0.4 to 0.8 mm (If necessary, form starting contact lever, then test motor start and points distance at end of cycle)



①



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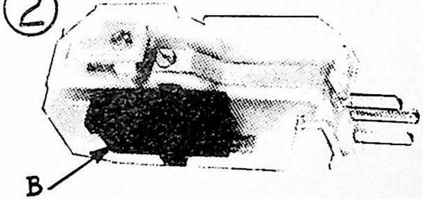


PRONGS

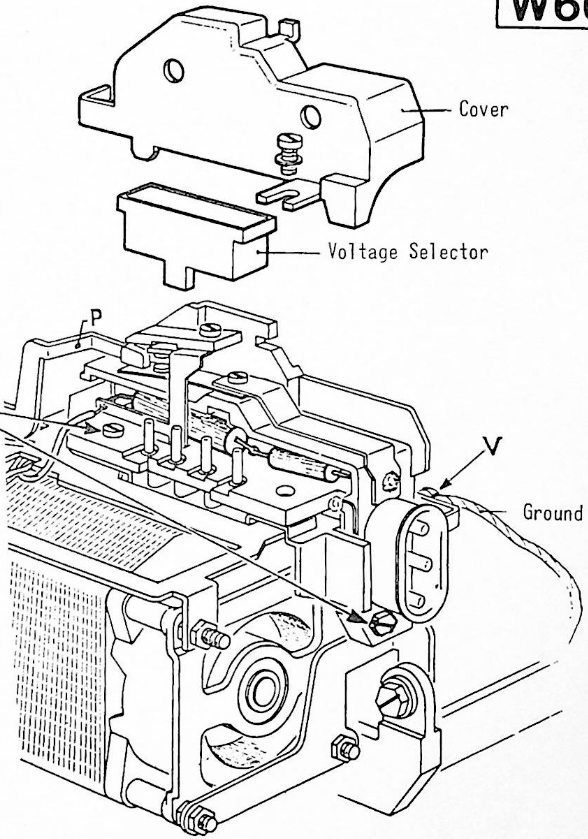
- If the breakage involves the plastic support W67
- If the prongs are loose, tighten

Induction Motor

- If the upper prong is broken, replace complete assembly W67
- If the middle or lower prong is broken:
  - Remove ground wire and prongs protector screw V
  - Remove the voltage selector and assembly cover
  - Remove fastening screw
  - Move the assembly aside to get to the broken prong's hex nut
  - Replace prong and return all parts to original position (During the assembly make sure that the lower contact point blade is under the starting contact lever P)

Brush Motor

- If the prongs are broken:
  - Disassemble the motor X17
  - Replace the prong
  - Reassemble the motor X17



PRONG SUPPORT ASSEMBLY

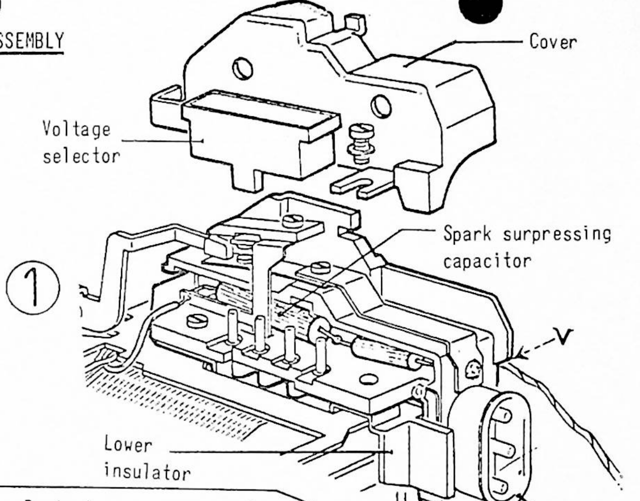
Replacing the prong support assembly:

Induction Motor (fig. 1)

- Remove plastic cover
- Remove prong protector and voltage selector
- Remove ground wire screw V and other fastening screw
- Remove the lower insulation protector
- Unsolder the wire connected to the lower prong metal strip
- Unsolder the wire connected to the spark supressing capacitor and upper contact point
- Disconnect the wires to the voltage selector prongs by heating the prongs with the soldering iron (remember position of wires)

Reassembly:

- Solder wires to new unit; reinstall all parts to original position (During the assembly make sure that the lower contact point blade is under the starting contact lever)

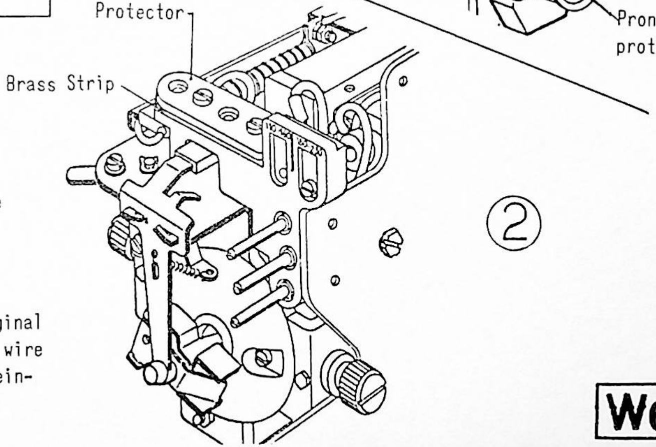


Brush Motor (fig. 2)

- Remove motor X17
- Remove plastic protector and invert the brass strip
- Remove screws fastening the assembly
- Disconnect the lower prong
- Uncover and unsolder the upper connections of the voltage selector

Reassembly:

- Solder wires to new part and reassemble all parts to original position (During assembly make sure that the lower prong wire does not rub against the commutator of the armature) - Reinstall the motor X17



SPARK SUPRESSING CAPACITOR

- If the motor continues to run even with contact points open, replace capacitor

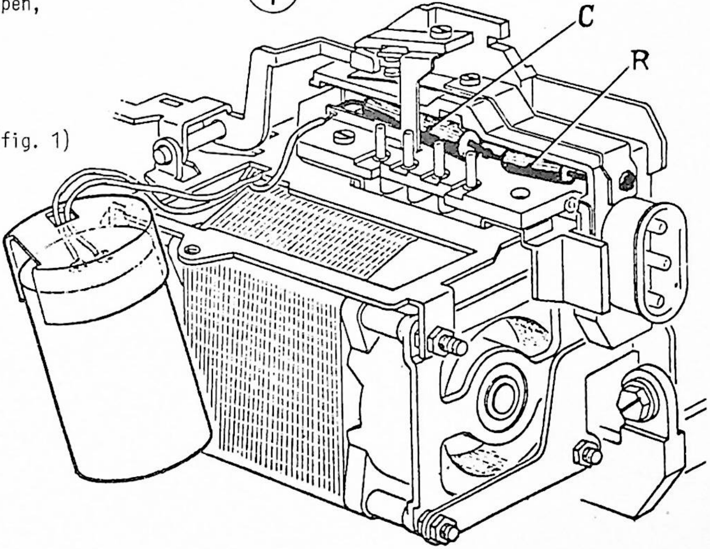
Induction Motor

- Replace group composed of capacitor C and resistance R (fig. 1)

Brush Motor

- Replace capacitor C1 (fig. 2)

①



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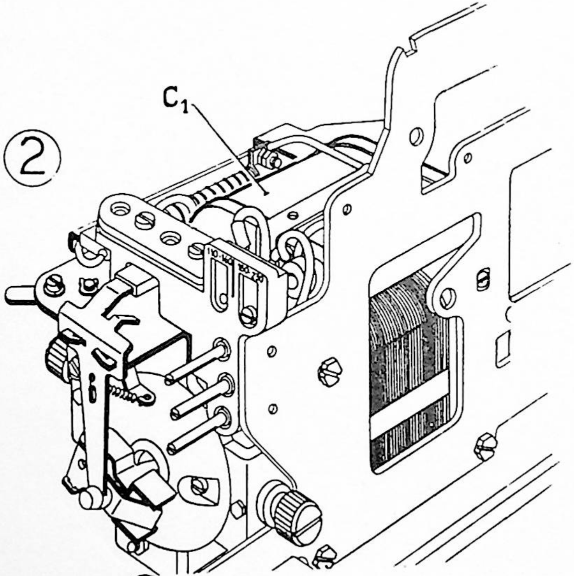
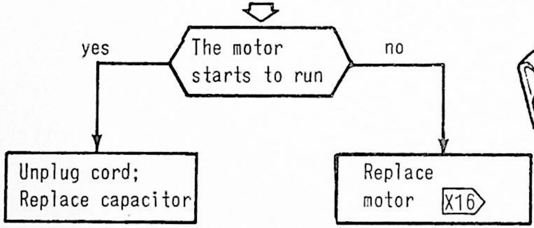
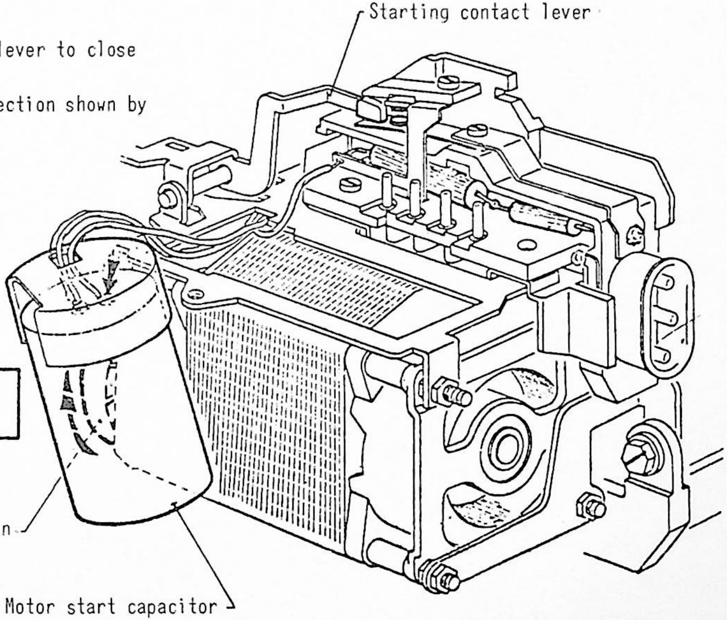


MOTOR START CAPACITOR

Induction Motor

- To check efficiency of capacitor:
    - Machine at rest
    - Detach capacitor wire (single)
    - Plug cord in
    - With screwdriver raise starting contact lever to close points
    - Manually rotate the motor fan in the direction shown by the arrow

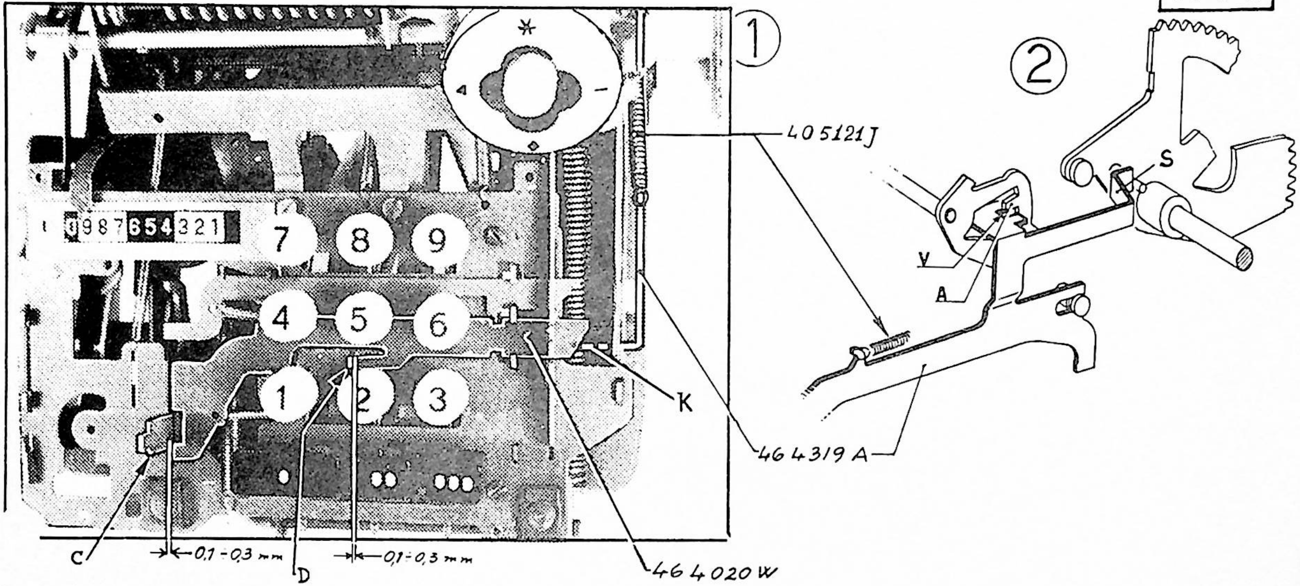




LOCALIZATION

MC20 - MC23

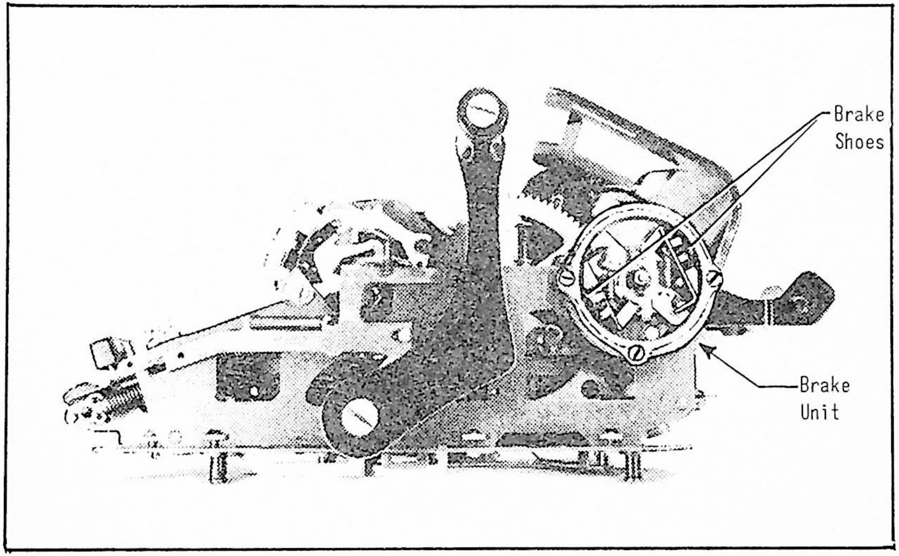
Summa Prima – RECIPROCAL LOCKS COMMAND SLIDER 464319A AND PLATE 464020W



Remove keyboard cover plate

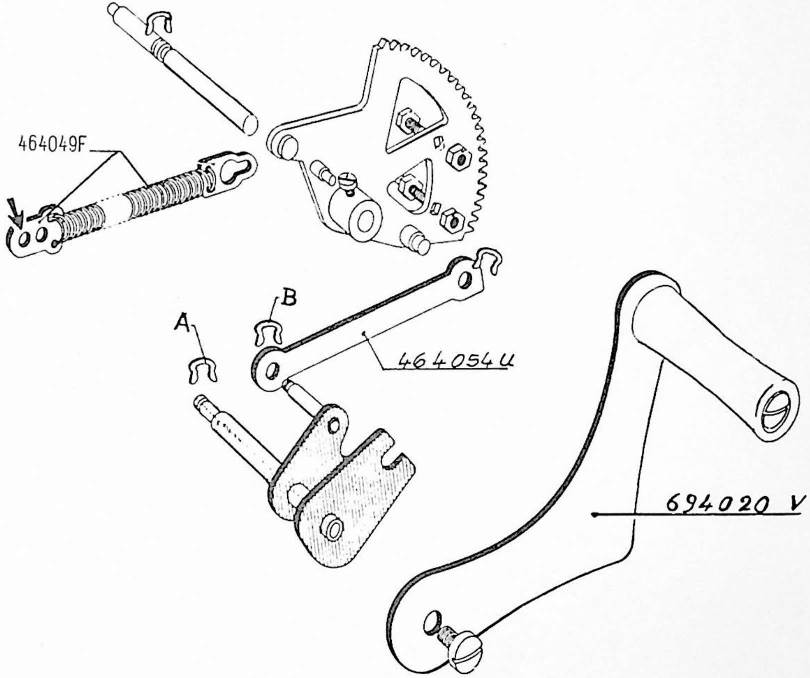
1) If the 464020W and 464319A are sluggish, clean and lubricate at guide points (fig. 1)
2) Check efficiency of spring m (fig. 1)
3) Shift the $\boxed{T}$ and $\boxed{S}$ button several times and check that tooth A passes with a certain margin of clearance into notch V; if necessary form 464319A at S (fig. 2)
4) Check that between the key stems and plate 464020W there is a clearance of 0.1 to 0.3 mm as indicated in fig. 1; if necessary form extension K

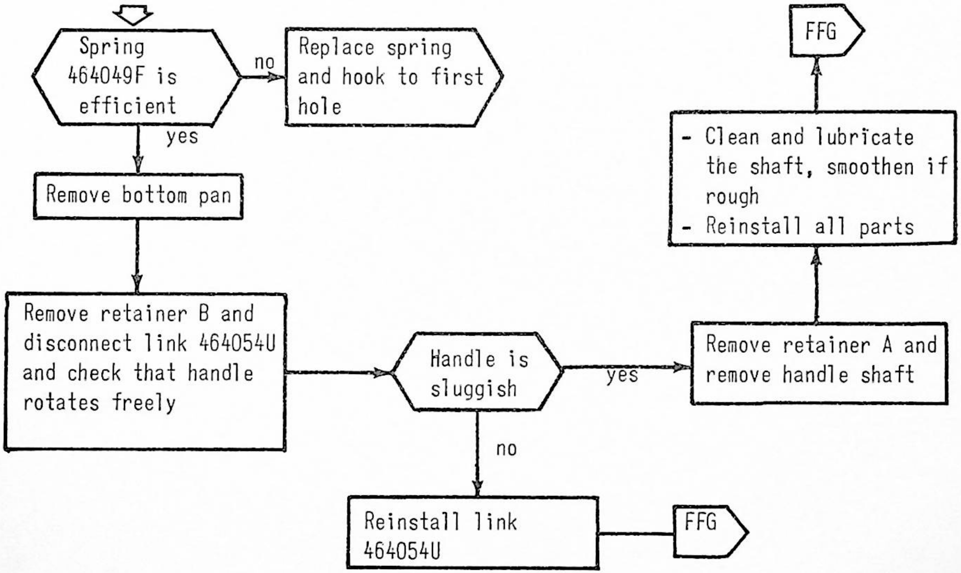
BRAKE UNIT



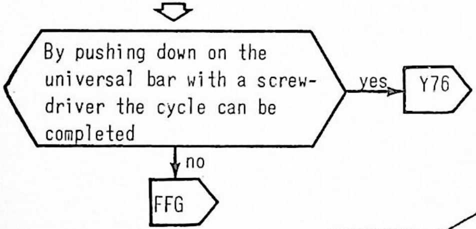
1) Clean the brake unit with cleaning fluid (particularly the cork shoes)
2) Repeatedly operate the handle and make sure that it returns to rest without stalling

Summa Prima – HANDLE 694020V AND SPRING 464049F

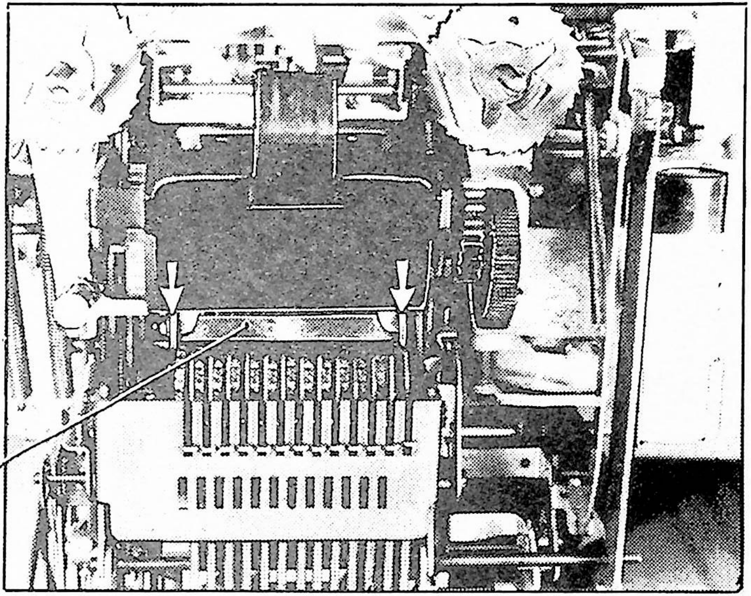



Spring 464049F is efficient
no
Replace spring and hook to first hole
yes
Remove bottom pan
Remove retainer B and disconnect link 464054U and check that handle rotates freely
Handle is sluggish
yes
Remove retainer A and remove handle shaft
- Clean and lubricate the shaft, smoothen if rough
- Reinstall all parts
FFG
no
Reinstall link 464054U
FFG

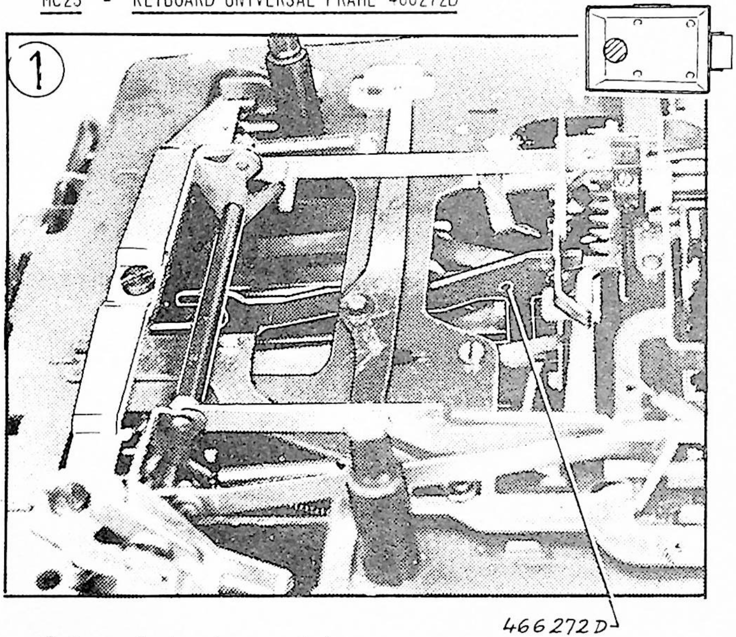
UNIVERSAL BAR

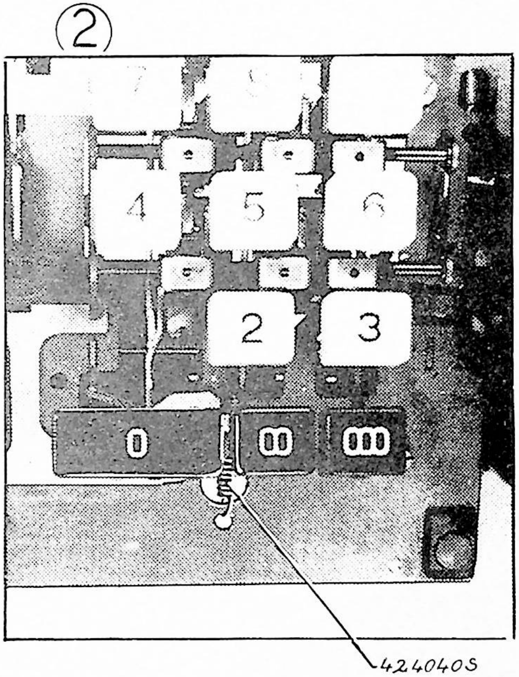


By pushing down on the universal bar with a screwdriver the cycle can be completed



MC23 - KEYBOARD UNIVERSAL FRAME 466272D





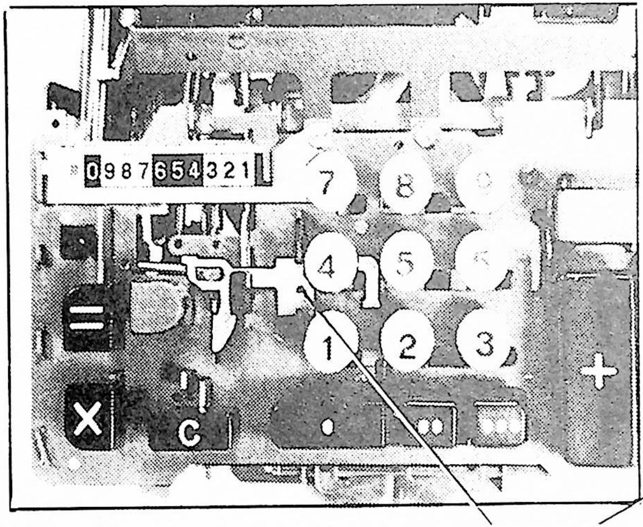
1) Remove keyboard cover plate

2) If keyboard universal frame 466272D is sluggish, clean and lubricate the guide points (fig. 1)

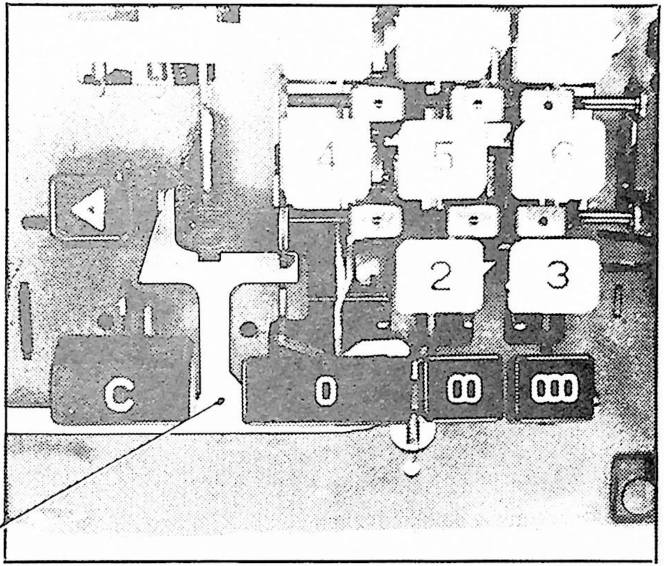
3) Check efficiency of spring 424040S (fig. 2)

RECIPROCAL LOCK PLATE 468020A

MC 20



MC 23

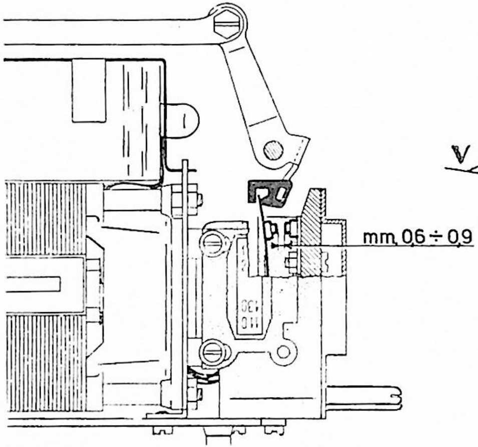


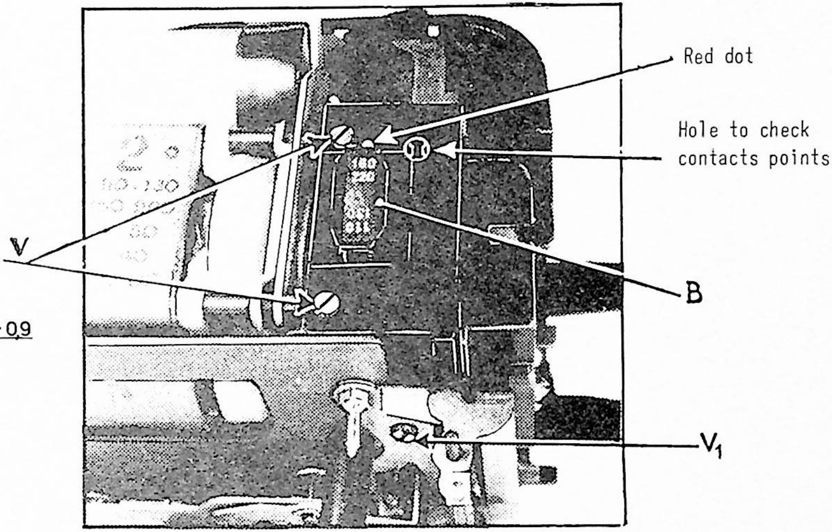
1) Remove keyboard cover plate

2) Clean and lubricate guide points of plate

3) Check efficiency of lock plate return spring

VOLTAGE SELECTOR AND CONTACT POINTS





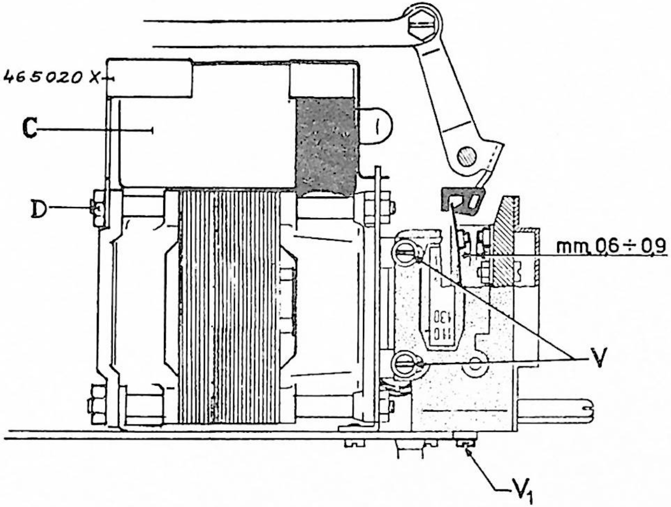
1) The voltage selector plug B must be installed in a manner to have the voltage rating, corresponding to the line voltage, toward the red dot.

2) If at rest, the clearance between the contact points is not 0.6 to 0.9 mm: Loosen the two screws V and lower screw V1 to adjust

3) If the contact points are pitted:

    - Remove the two screws V and screw V1
    - Move the unit until the points are accessible, then dress them with a fine file or stone
    - Check that the machine is at rest
    - Install unit and adjust for a clearance of 0.6 to 0.9 mm between the points

PRONG BLOCK

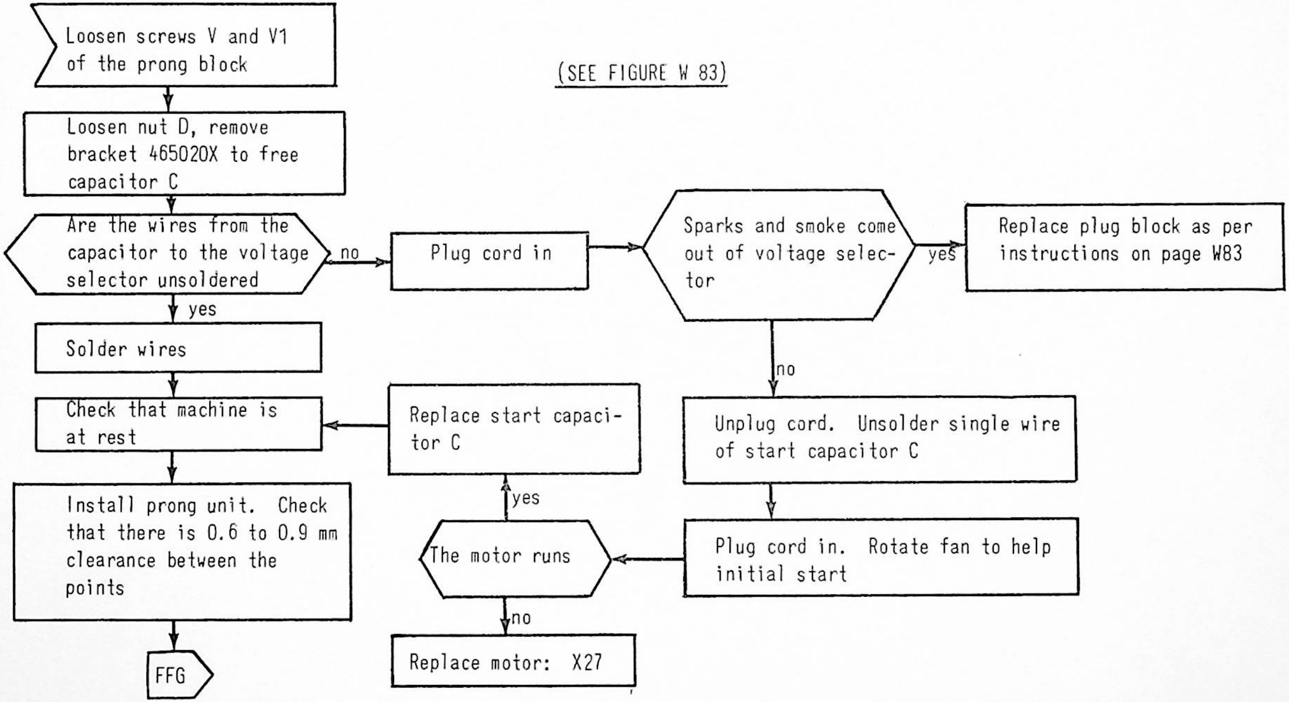


1) If the prong block is cracked or broken replace as follows:
   - Remove screws V and V1
   - Displace in manner to get to soldered wires
   - Unsolder the wires between the motor and prong block (remember their position)
   - Hold the new unit 465110W (Quanta 460236F) in the same position as the old one, then resolder the wires in proper position
   - Check that the machine is at rest
   - Install new unit and position it to obtain the 0.6 to 0.9 mm clearance between the contacts

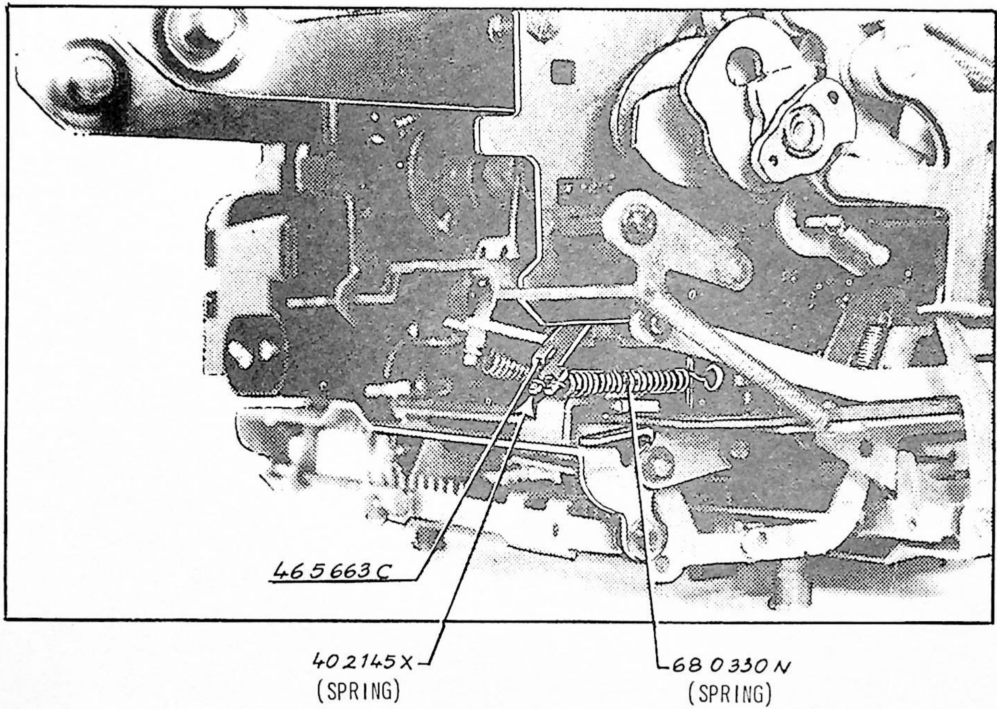
2) If a prong is broken:
   - Remove screws V and V1
   - Position block to remove broken part; replace with new part maintaining original condition
   - Install and fasten unit in a position to obtain the required 0.6 to 0.9 mm clearance between the contacts

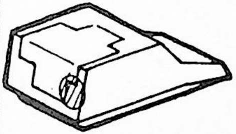
MOTOR UNIT

(SEE FIGURE W 83)

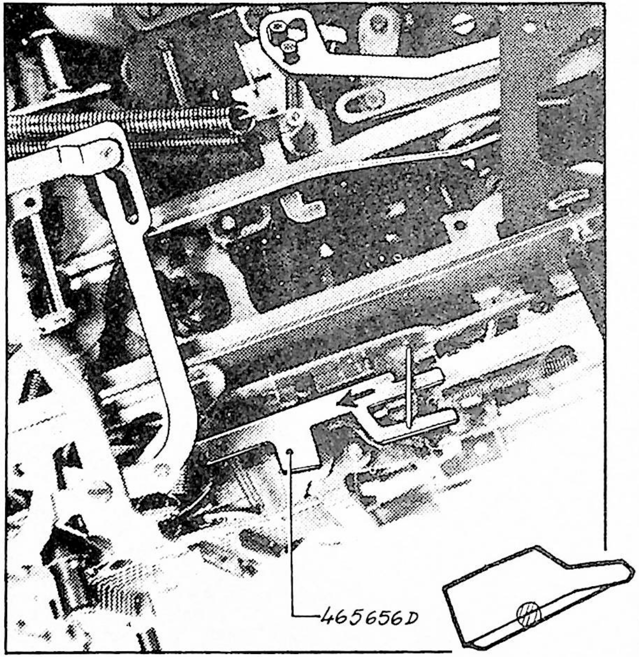

Loosen screws V and V1 of the prong block
Loosen nut D, remove bracket 465020X to free capacitor C
Are the wires from the capacitor to the voltage selector unsoldered
yes
Solder wires
Check that machine is at rest
Install prong unit. Check that there is 0.6 to 0.9 mm clearance between the points
FFG
no
Plug cord in
Sparks and smoke come out of voltage selector
yes
Replace plug block as per instructions on page W83
no
Unplug cord. Unsolder single wire of start capacitor C
Plug cord in. Rotate fan to help initial start
The motor runs
yes
Replace start capacitor C
no
Replace motor: X27

MC20M - SPRING OF BRIDGE 465663C





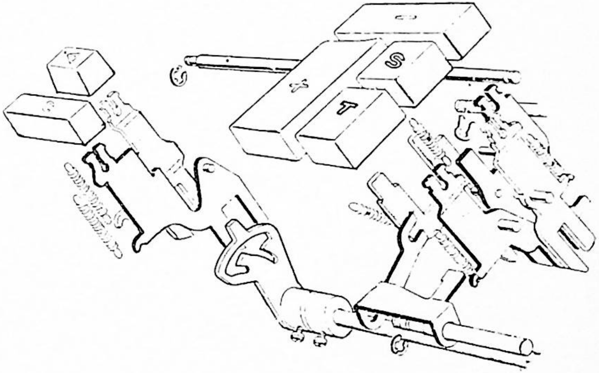
HOW TO STOP MULTIPLICATION



1) If machine cycles continually with the $\boxed{=}$ key depressed, push slider 465656D towards the rear, then complete cycle

2) Perform the test indicated in FFG

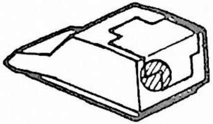
DEFORMED KEYSTEM

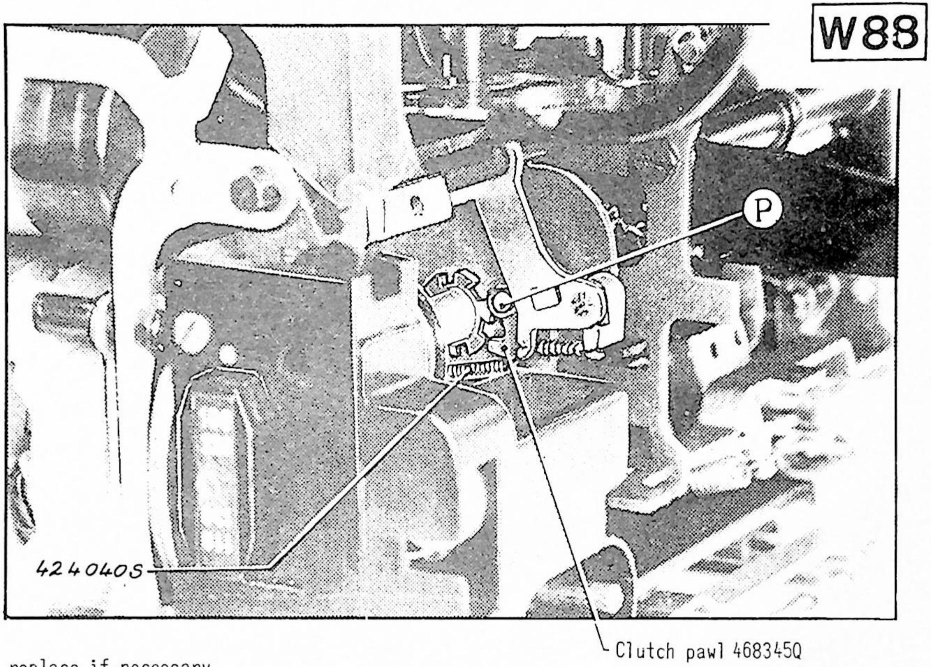


If the keystem is deformed:

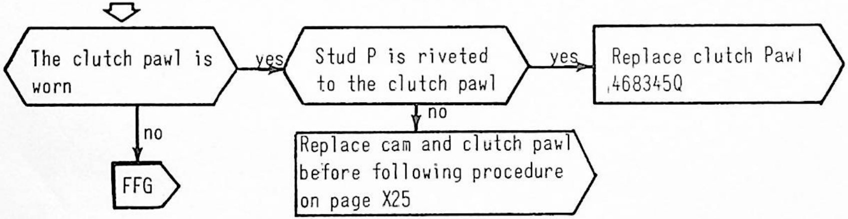
- Remove the keyboard cover plate
- Remove keytop
- Form keystem to proper shape
- If necessary hook the return spring
- Install keytop and keyboard cover plate

CLUTCH PAWL 468345Q

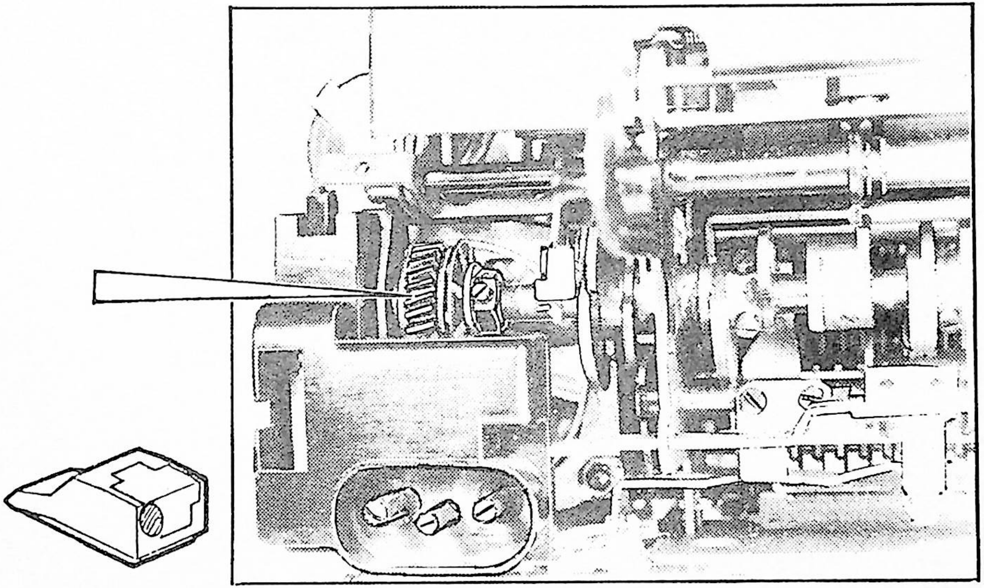




1) Clean the clutch pawl
2) Check efficiency of spring and replace if necessary

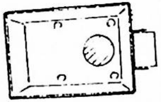

The clutch pawl is worn
yes
no
FFG
Stud P is riveted to the clutch pawl
yes
no
Replace clutch Pawl 468345Q
Replace cam and clutch pawl before following procedure on page X25

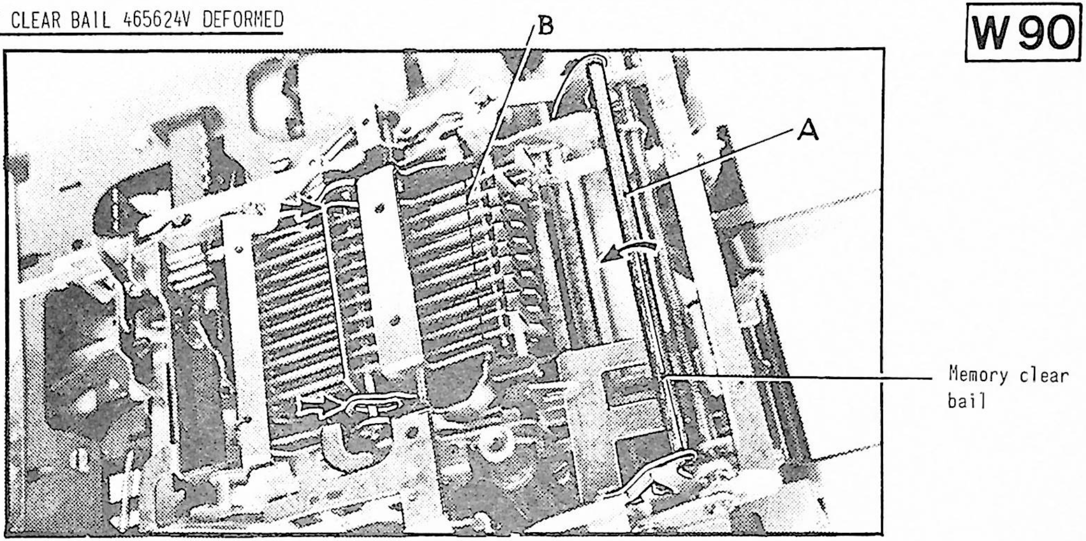
CLUTCH GEAR



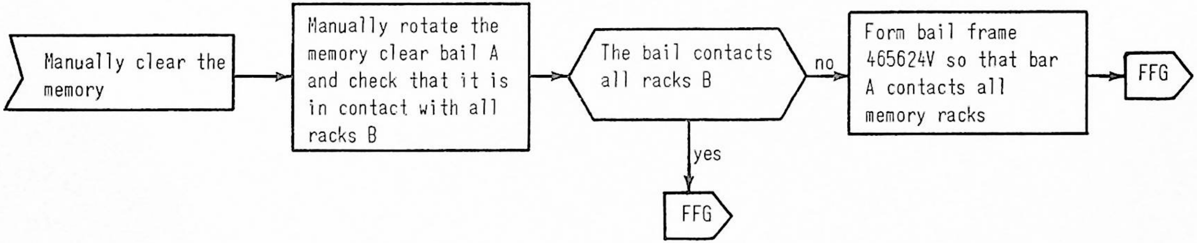
- If clutch gear is worn replace by following procedure on page X26

MC20M - MEMORY CLEAR BAIL 465624V DEFORMED





- To unjam machine: push at points indicated by arrows to disengage the memory while simultaneously rotating the main shaft to complete the cycle


Manually clear the memory
Manually rotate the memory clear bail A and check that it is in contact with all racks B
The bail contacts all racks B
no
Form bail frame 465624V so that bar A contacts all memory racks
FFG
yes
FFG

REGISTER ENGAGEMENT CONTROL MECHANISM

The machine is a Summa Prima — yes → W92

no

- Machine at rest
- Cord unplugged

Cam followers T (Fig. 1) are straight — No → Straighten

Yes

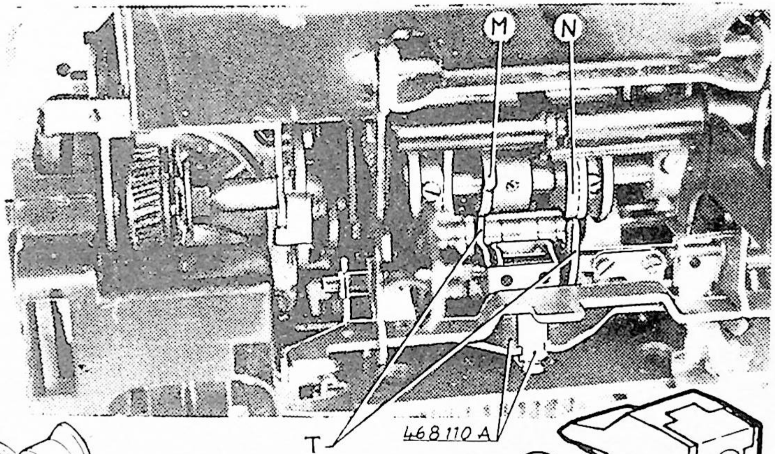
Depress T Key; rotate main shaft to maximum rotation of frame 468110A (Fig. 1) (The cam followers T must be centered in respect to the profiles M and N of the cams)

This condition exists — Yes → FFG

No

Clean and lubricate the calculation mechanism (see arrows Fig. 2)

→ Y88



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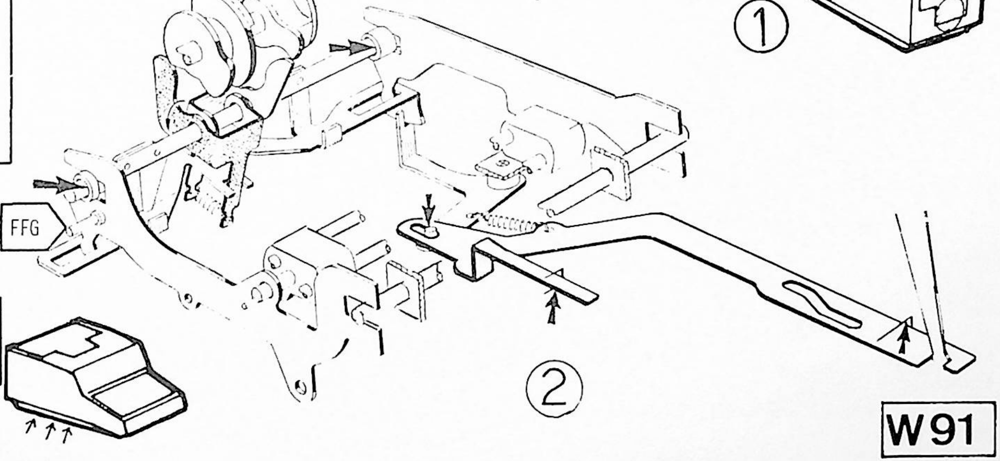


②

Machine at rest

Depress the T key; pull operating crank towards front until the maximum rotation of 464044S (fig. 1)

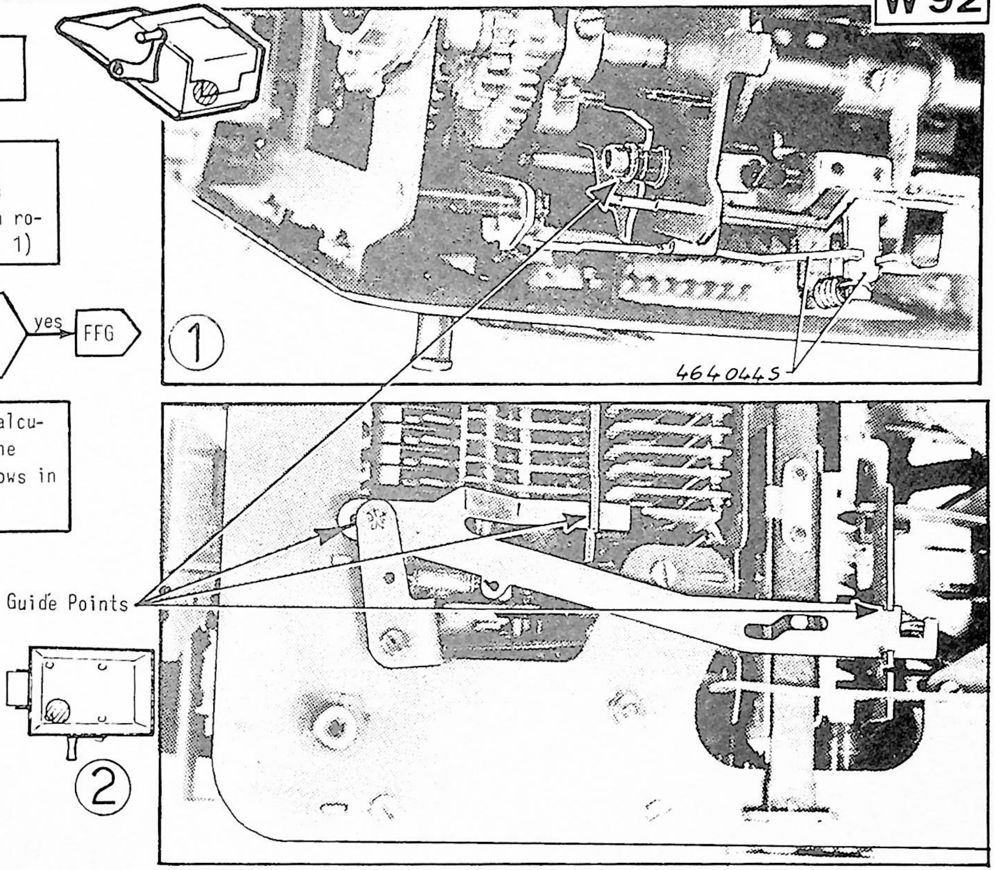
The frame moves freely

yes → FFG

no

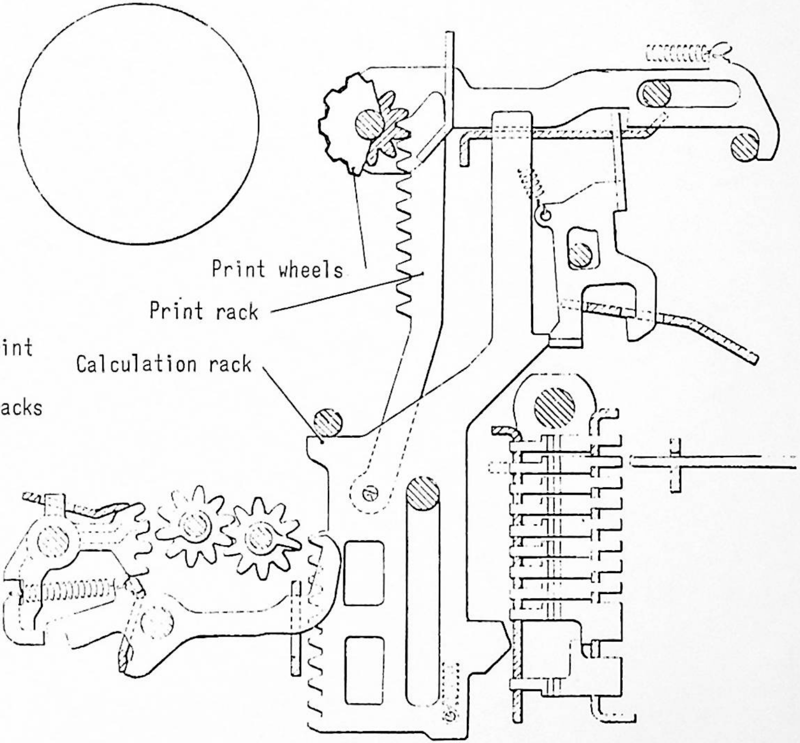
Clean and lubricate calculation mechanism at the guide points (see arrows in Figs. 1 and 2)

FFG



PRINT WHEELS

- Machine at rest - Cord unplugged
- Depress the T key
- Rotate main shaft until the print racks are at top dead center
- Push them down one by one and check that the print wheels and calculation racks are free. If necessary clean the print wheels and calculation racks at the guide points



REGISTER WHEELS

1) Depress the T key twice
2) Unplug cord
3) Change position of credit balance bridge S (to opposite balance)
4) Depress the S key
5) Rotate knob until all print racks are at top dead center just before print trips

The print racks are free when pushed down one by one

yes → FFG

no

Disassemble as per instructions on: Page 15 of NOTES for MC20; Page 16 of NOTES for MC23. Clean and lubricate the print wheels

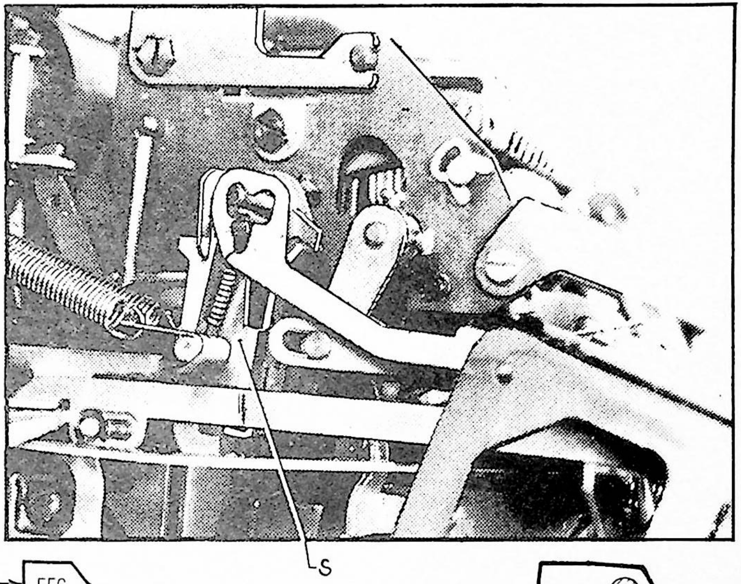
The print racks are free when pushed down one by one

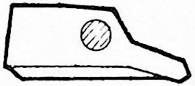
yes → Assemble parts removed → FFG

no

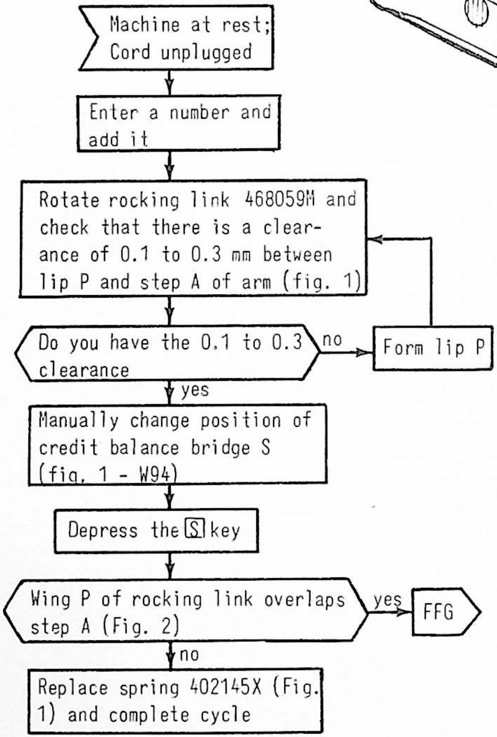
Assemble parts removed

Y89





ANCHOR 468059M



Machine at rest; Cord unplugged

Enter a number and add it

Rotate rocking link 468059M and check that there is a clearance of 0.1 to 0.3 mm between lip P and step A of arm (fig. 1)

Do you have the 0.1 to 0.3 clearance

no → Form lip P

yes

Manually change position of credit balance bridge S (fig. 1 - W94)

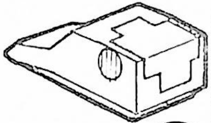
Depress the S key

Wing P of rocking link overlaps step A (Fig. 2)

yes → FFG

no

Replace spring 402145X (Fig. 1) and complete cycle



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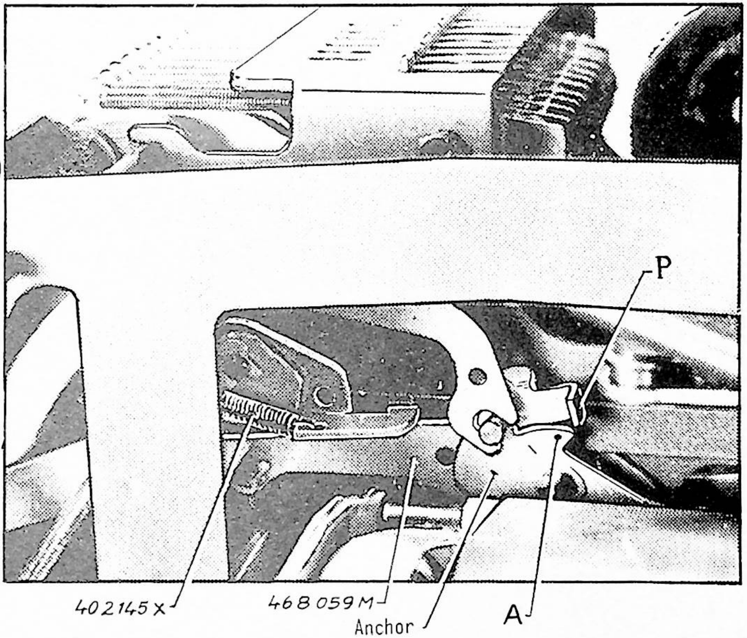
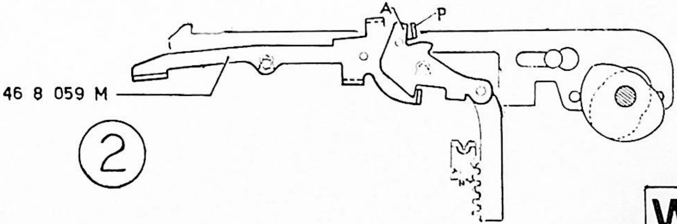
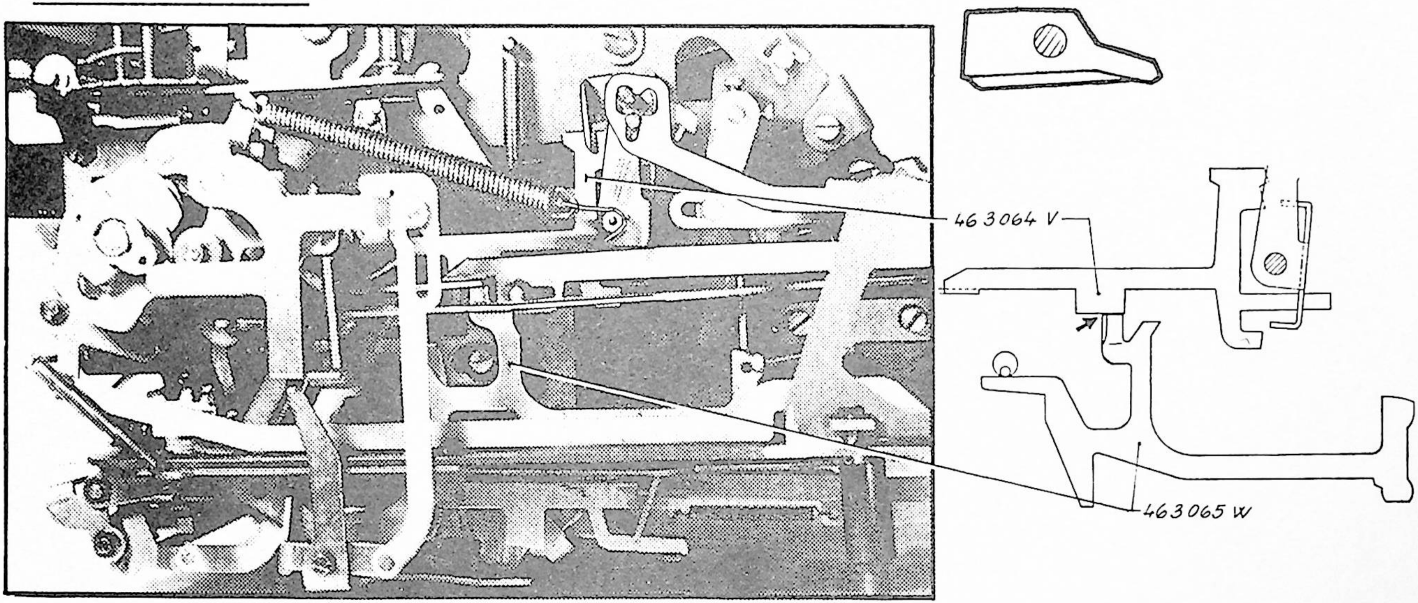




②

POSITION OF PLATE 463064V



1) Make a [T] cycle

2) If the hold of rod 463064V on plate 463065W is not sufficient, form the rod in manner to obtain a good hold even when it is displaced laterally

3) Make check on page [Y90>]

CARRY SECTORS UNIT

- Check that spring M is properly hooked (fig. 2)

Machine at rest; Cord unplugged

Is the 0.4 to 0.6 mm clearance (fig. 1 & 2) correct

no → Trip clutch and rotate main shaft until maximum command of universal bar → Form extension P to obtain clearance

yes ↓

Depress # key

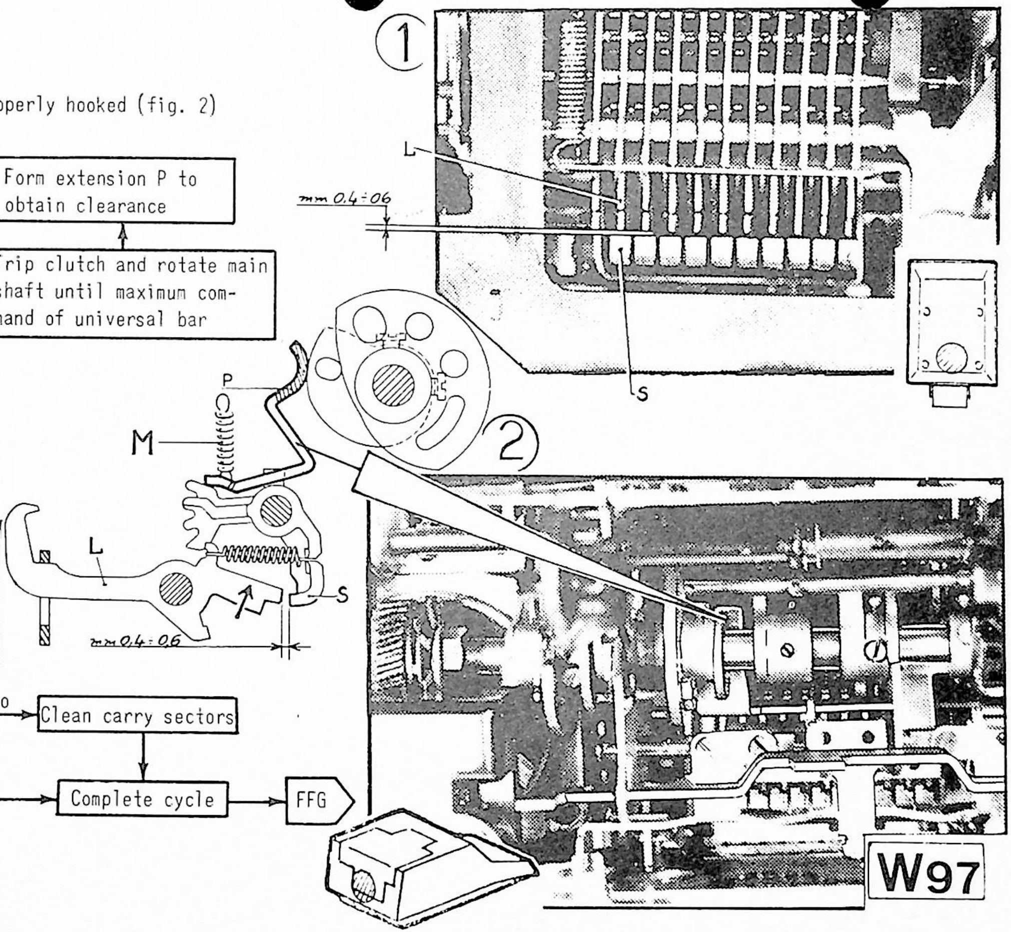
Rotate knob until maximum command of universal bar

In above condition push transmission lever L in the direction shown by arrow and check that carry sectors S trip freely

The carry sectors work freely

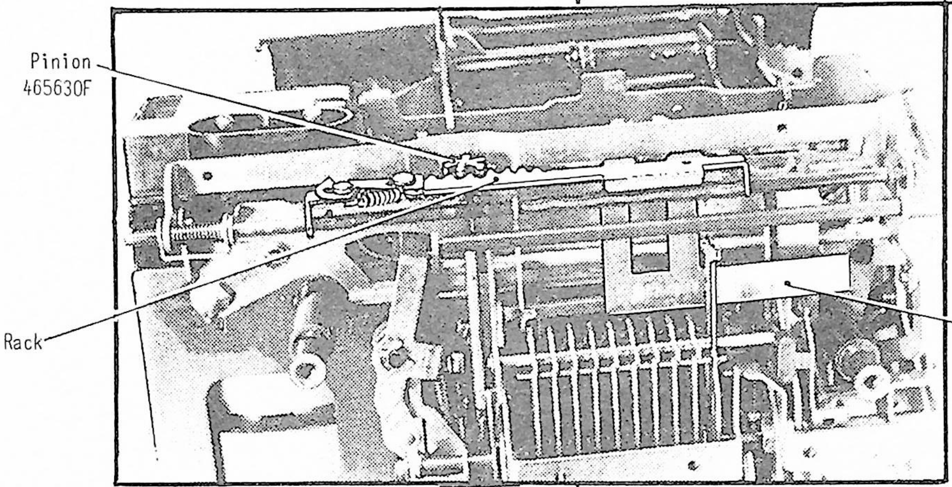
no → Clean carry sectors → Complete cycle

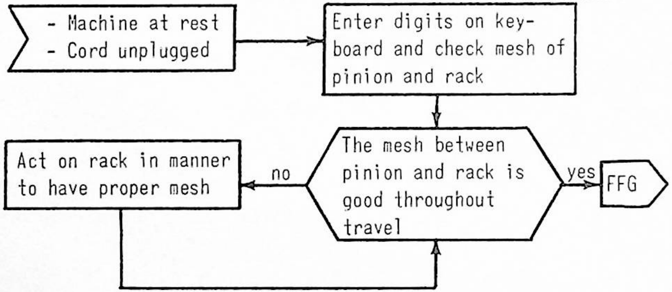
yes → Complete cycle → FFG



W98

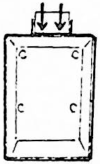
MC20M - MESH BETWEEN PINION 465630F AND RACK 465617W




- Machine at rest
- Cord unplugged
Enter digits on keyboard and check mesh of pinion and rack
The mesh between pinion and rack is good throughout travel
no
yes
FFG
Act on rack in manner to have proper mesh

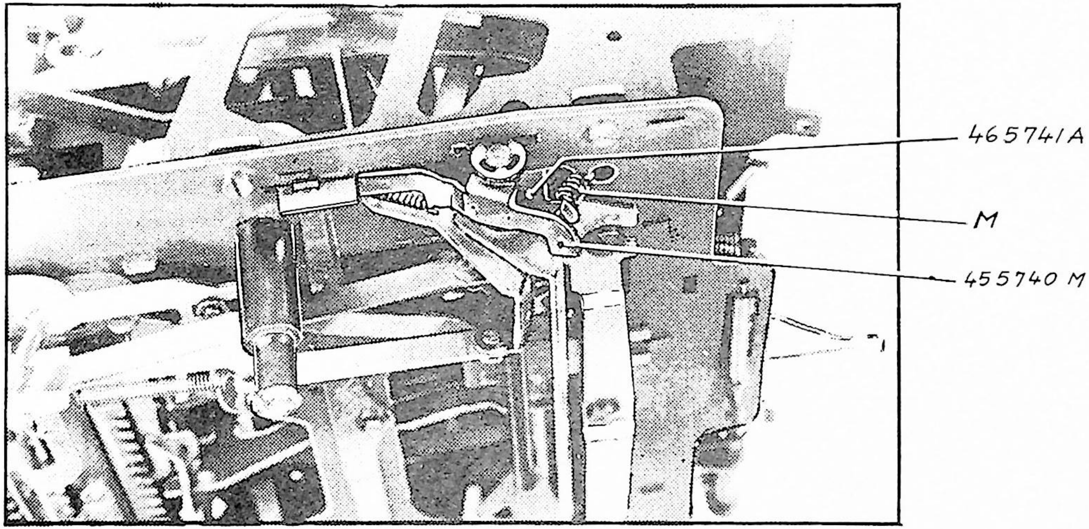
W99

MC20M - DEFORMED PLATE 465617W

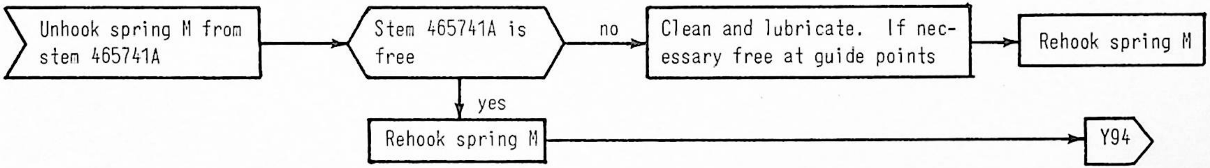


- If plate 465617W is deformed, straighten

MC20M - AUTOMATIC TOTAL COMMAND

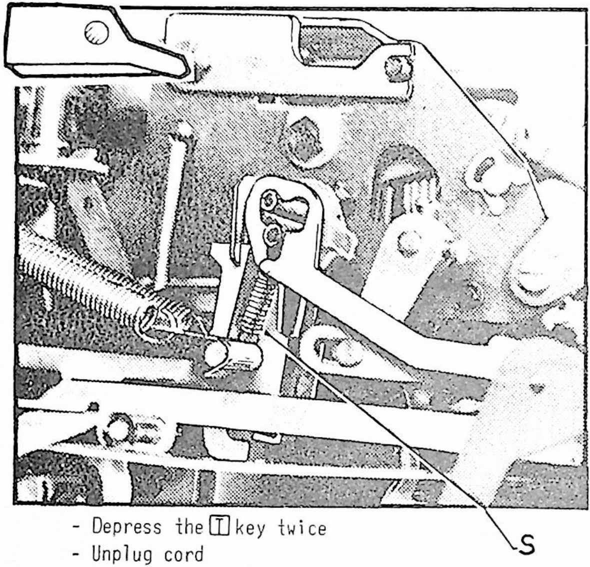


If the spring of either bridge 465740M or stem 465741A is unhooked or inefficient, hook or replace


Unhook spring M from stem 465741A
Stem 465741A is free
no
Clean and lubricate. If necessary free at guide points
Rehook spring M
yes
Rehook spring M
Y94

W101

PRINT SLIDERS

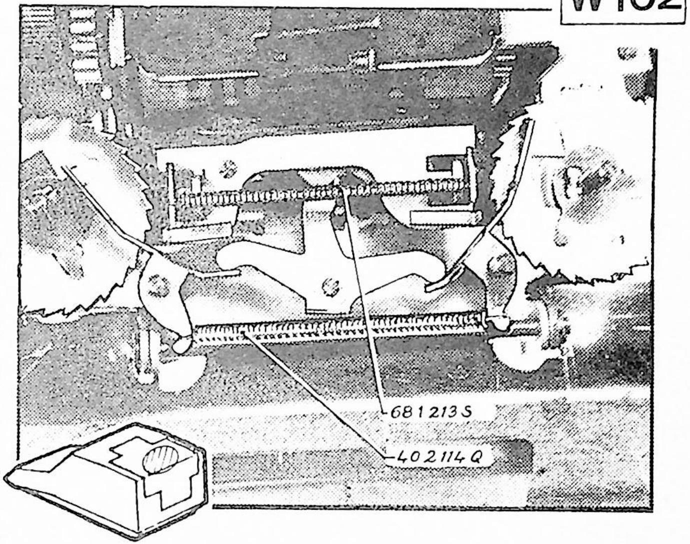


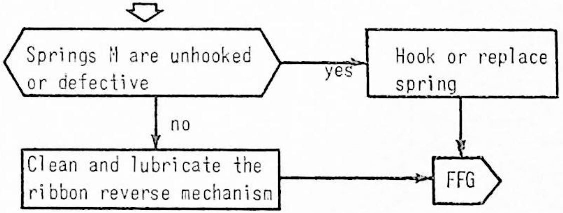
- Depress the T key twice
- Unplug cord
- Change position of credit balance bridge
- Depress the S key
- Rotate knob until print trips
- Check that all print sliders have traveled to the platen

(If necessary clean and lubricate the print sliders' guide points)

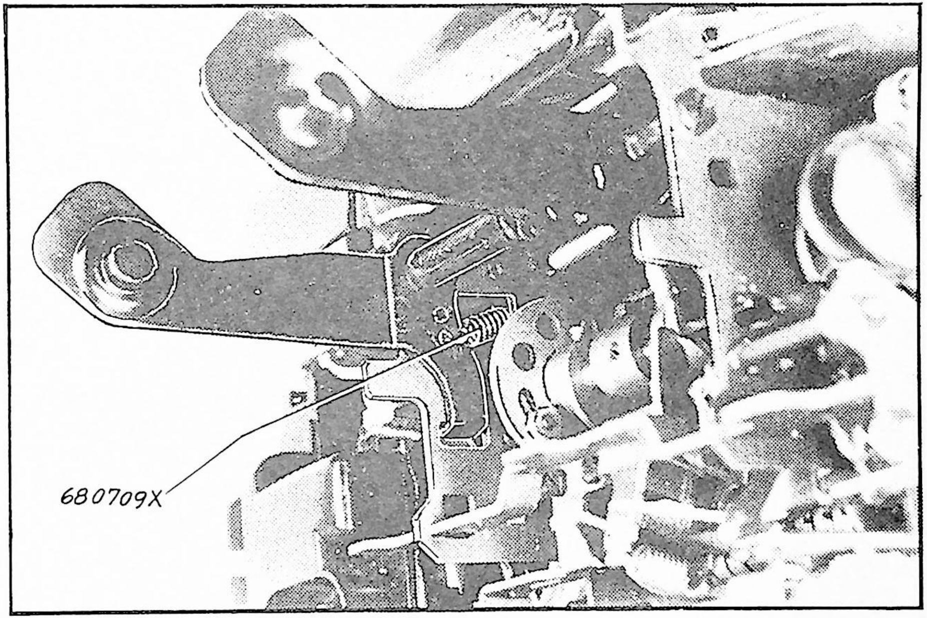
W102

RIBBON REVERSE MECHANISM



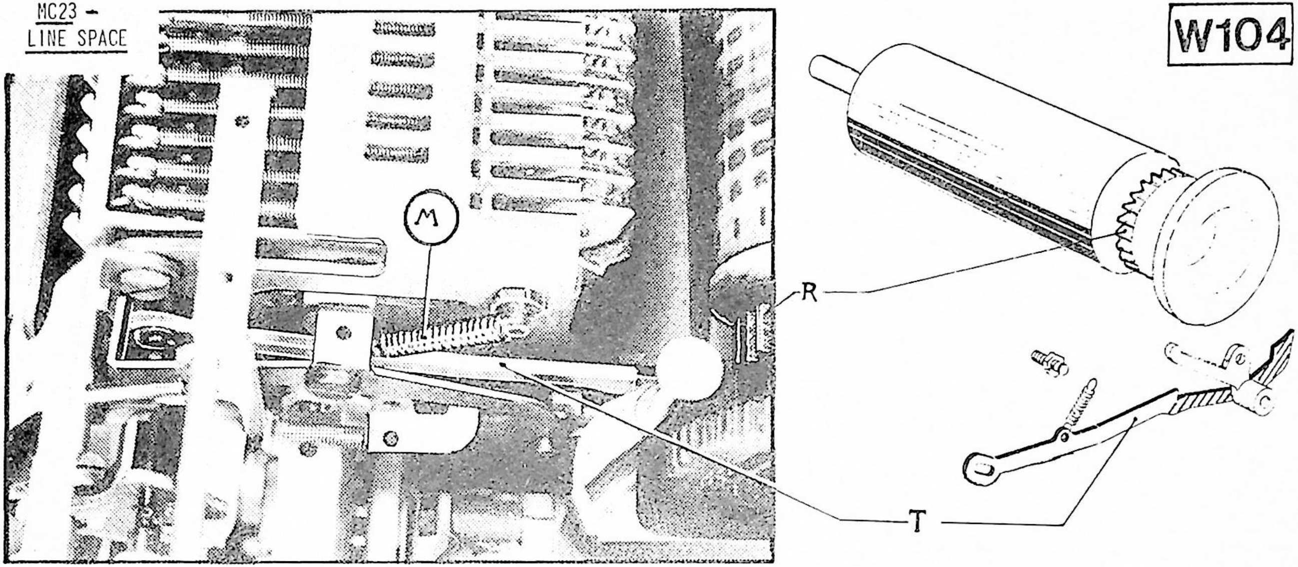

Springs M are unhooked or defective
yes
Hook or replace spring
no
Clean and lubricate the ribbon reverse mechanism
FFG

PLATEN



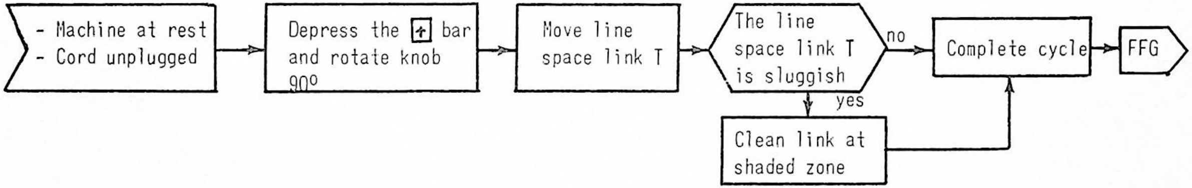
1) If platen is glazed, clean with platen conditioning solution

2) If the paper tensioner spring is unhooked, hook it

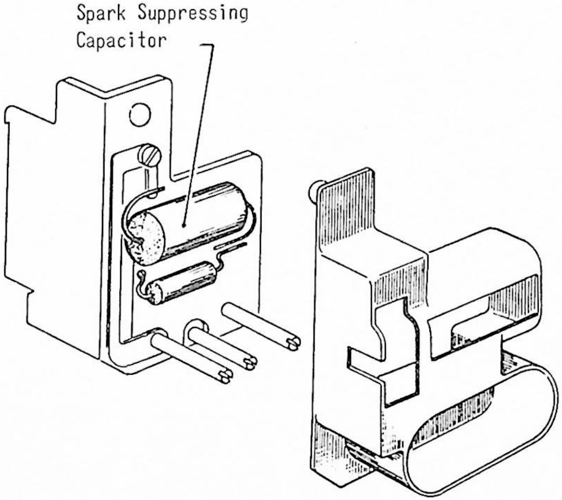


1) If the teeth of line space ratchet R are worn, replace the platen following the procedure on page 16 (Do not disassemble the ribbon carrier unit)

2) If spring M is unhooked or defective, rehook or replace


- Machine at rest
- Cord unplugged
Depress the 4 bar and rotate knob 90°
Move line space link T
The line space link T is sluggish
no
yes
Clean link at shaded zone
Complete cycle
FFG

SPARK SUPPRESSING CAPACITOR

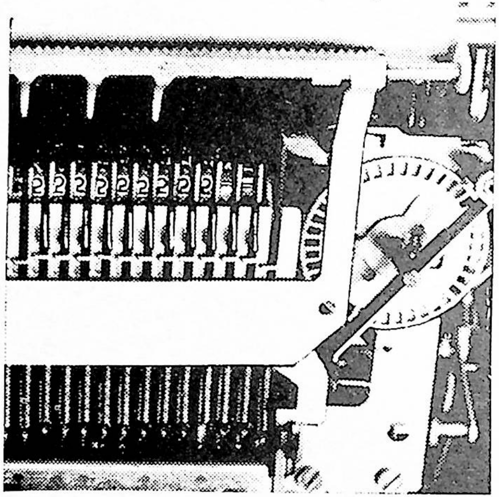


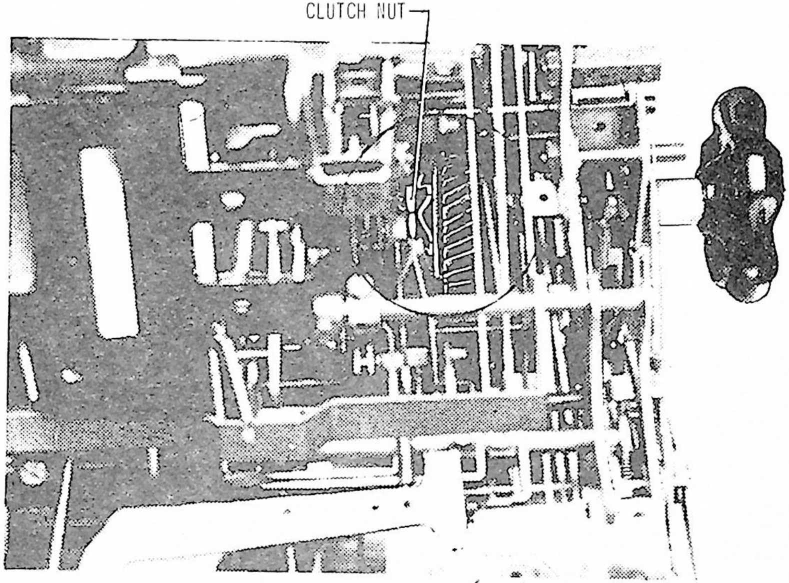
- The spark suppressing capacitor is defective if at the end of a cycle the motor continues to run
  To replace: Remove prong shield
  Unsolder and replace capacitor 481191D (460439B for Quanta)

INSPECT Y

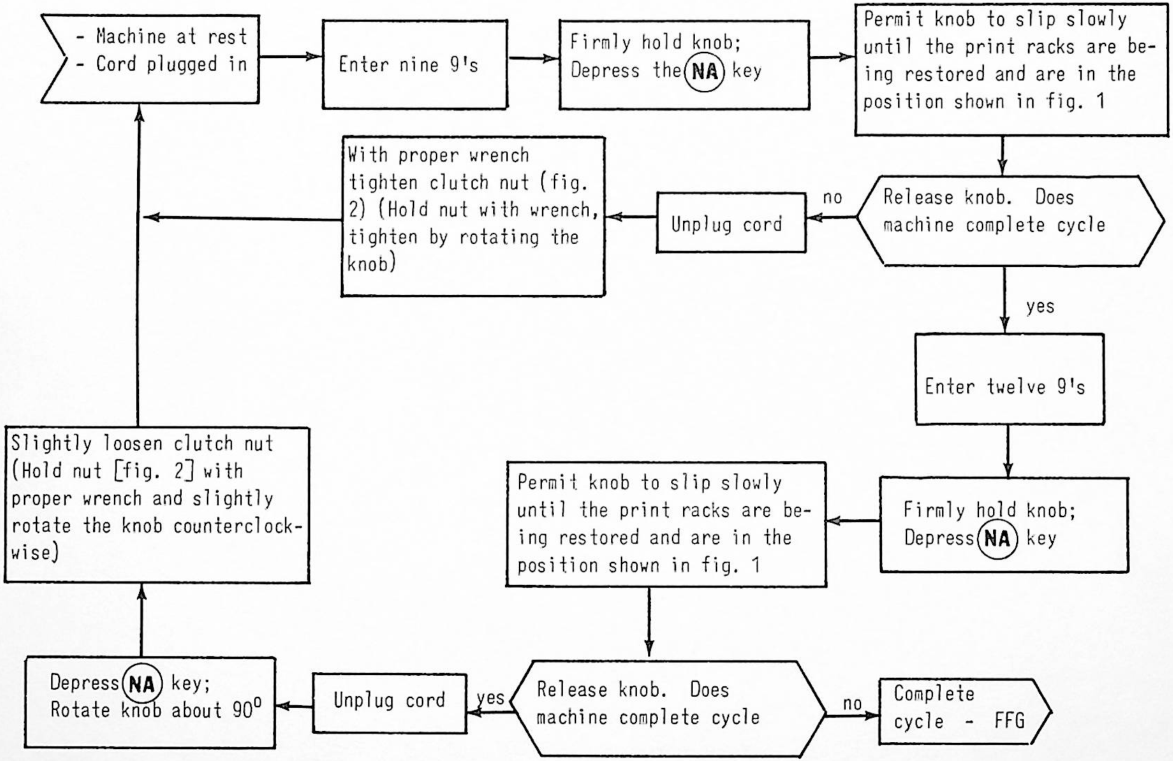
MC24 - CLUTCH ADJUSTMENT

①

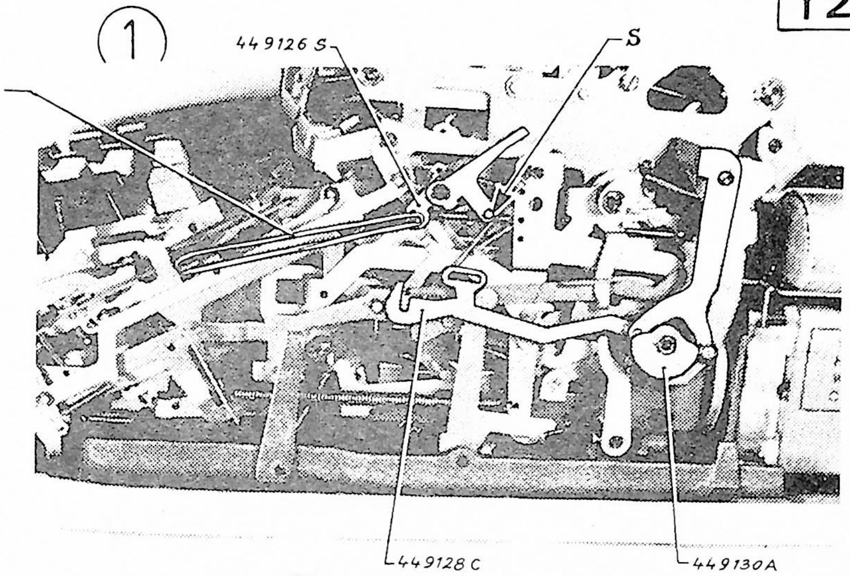


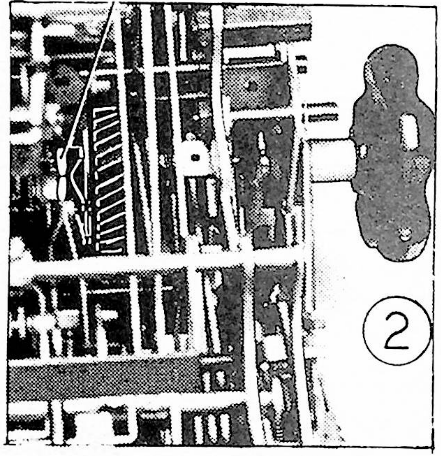


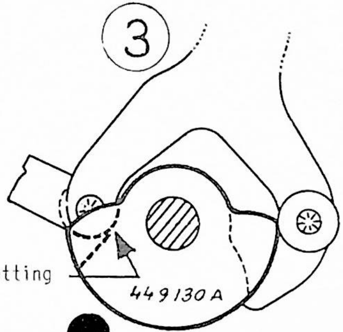
②

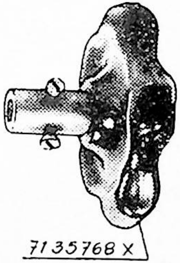

- Machine at rest
- Cord plugged in
Enter nine 9's
Firmly hold knob; Depress the NA key
Permit knob to slip slowly until the print racks are being restored and are in the position shown in fig. 1
Release knob. Does machine complete cycle
no
Unplug cord
With proper wrench tighten clutch nut (fig. 2) (Hold nut with wrench, tighten by rotating the knob)
yes
Enter twelve 9's
Firmly hold knob; Depress NA key
Permit knob to slip slowly until the print racks are being restored and are in the position shown in fig. 1
Release knob. Does machine complete cycle
no
Complete cycle - FFG
yes
Unplug cord
Depress NA key; Rotate knob about 90°
Slightly loosen clutch nut (Hold nut [fig. 2] with proper wrench and slightly rotate the knob counterclockwise)

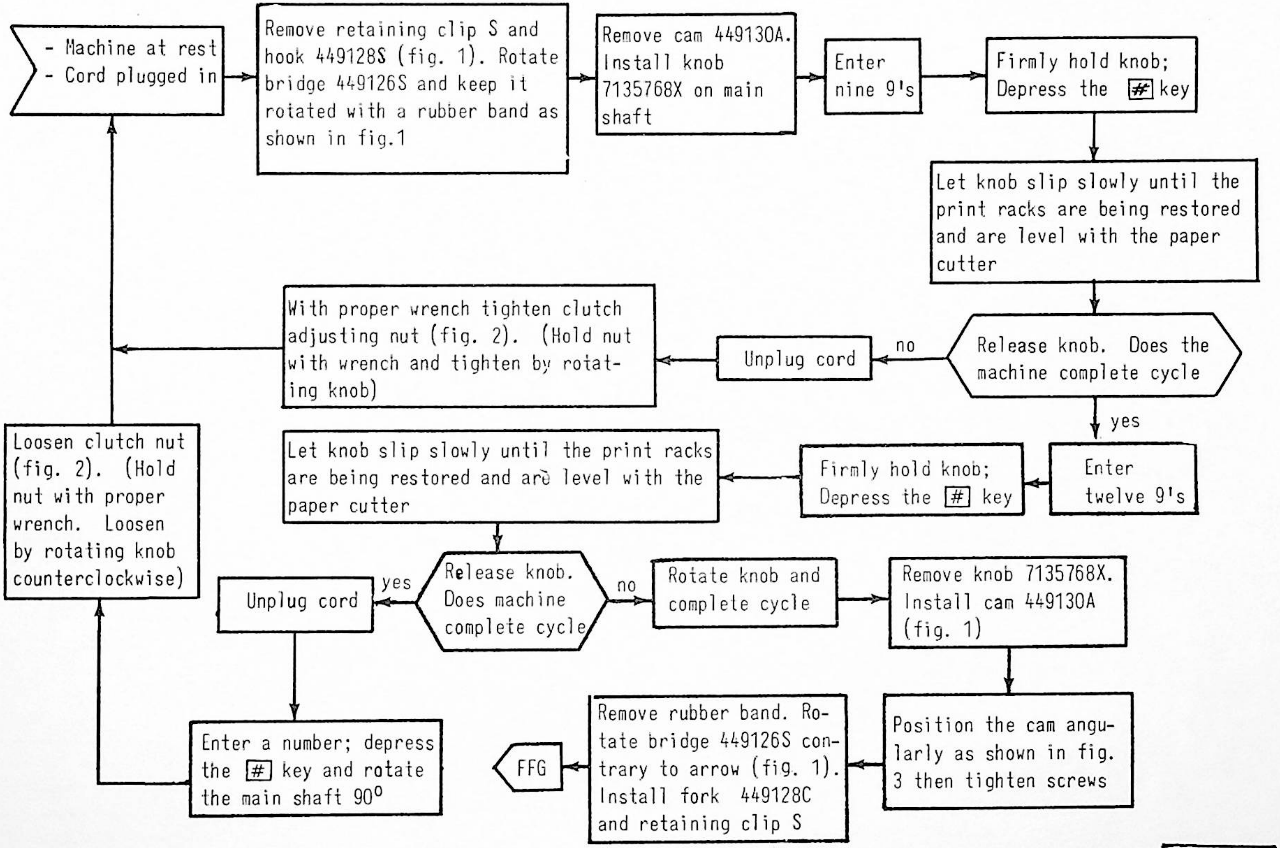
MC26 - CLUTCH ADJUSTMENT



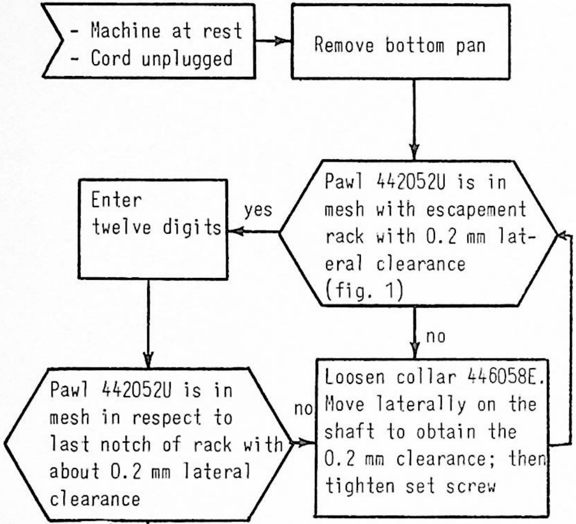







- Machine at rest
- Cord plugged in
Remove retaining clip S and hook 449128S (fig. 1). Rotate bridge 449126S and keep it rotated with a rubber band as shown in fig.1
Remove cam 449130A. Install knob 7135768X on main shaft
Enter nine 9's
Firmly hold knob; Depress the # key
Let knob slip slowly until the print racks are being restored and are level with the paper cutter
Release knob. Does the machine complete cycle
no
Unplug cord
With proper wrench tighten clutch adjusting nut (fig. 2). (Hold nut with wrench and tighten by rotating knob)
yes
Enter twelve 9's
Firmly hold knob; Depress the # key
Let knob slip slowly until the print racks are being restored and are level with the paper cutter
Release knob. Does machine complete cycle
yes
Unplug cord
Enter a number; depress the # key and rotate the main shaft 90°
Loosen clutch nut (fig. 2). (Hold nut with proper wrench. Loosen by rotating knob counterclockwise)
no
Rotate knob and complete cycle
Remove knob 7135768X. Install cam 449130A (fig. 1)
Position the cam angularly as shown in fig. 3 then tighten screws
Remove rubber band. Rotate bridge 449126S contrary to arrow (fig. 1). Install fork 449128C and retaining clip S
FFG

MC24 - ANTI REBOUND PAWL 442052U ADJUSTMENT



- Machine at rest
- Cord unplugged

Remove bottom pan

Pawl 442052U is in mesh with escapement rack with 0.2 mm lateral clearance (fig. 1)

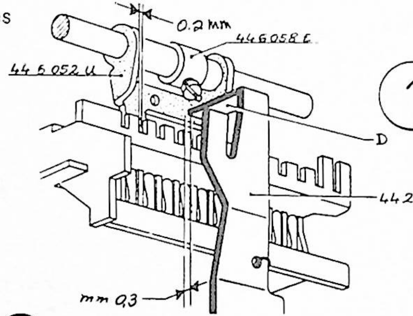
yes: Enter twelve digits

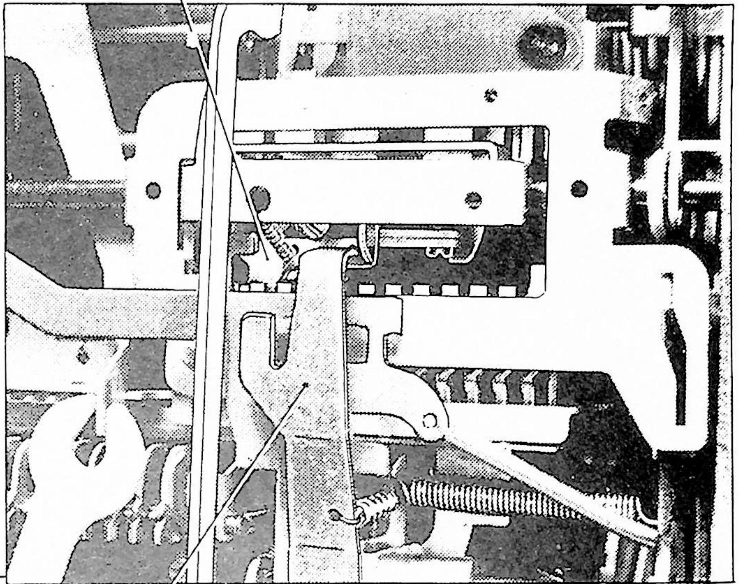
no: Loosen collar 446058E. Move laterally on the shaft to obtain the 0.2 mm clearance; then tighten set screw

Pawl 442052U is in mesh in respect to last notch of rack with about 0.2 mm lateral clearance

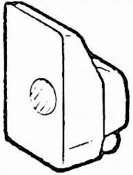
no

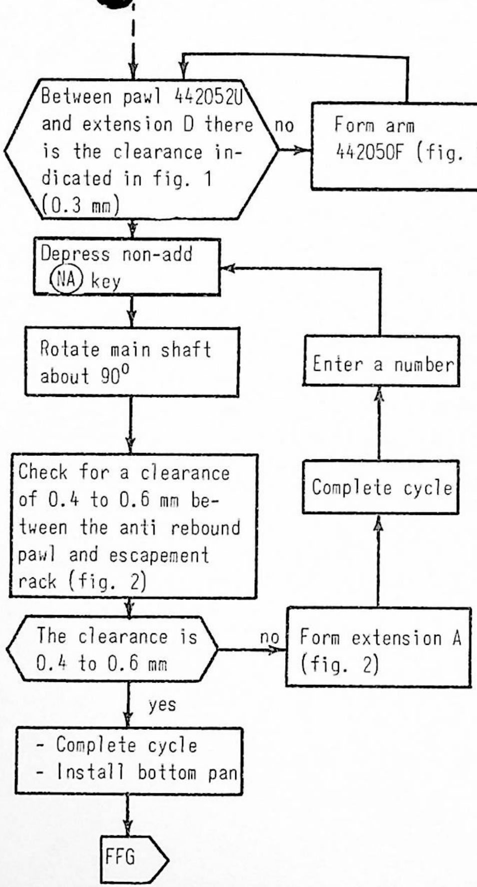
yes





①





Between pawl 442052U and extension D there is the clearance indicated in fig. 1 (0.3 mm)

no

Form arm 442050F (fig. 1)

Depress non-add (NA) key

Rotate main shaft about 90^0

Check for a clearance of 0.4 to 0.6 mm between the anti rebound pawl and escapement rack (fig. 2)

The clearance is 0.4 to 0.6 mm

no

Form extension A (fig. 2)

Complete cycle

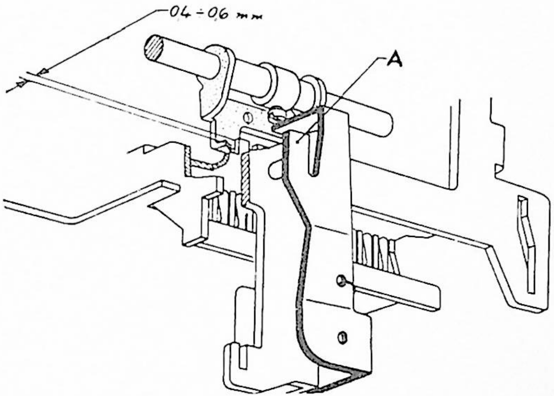
Enter a number

yes

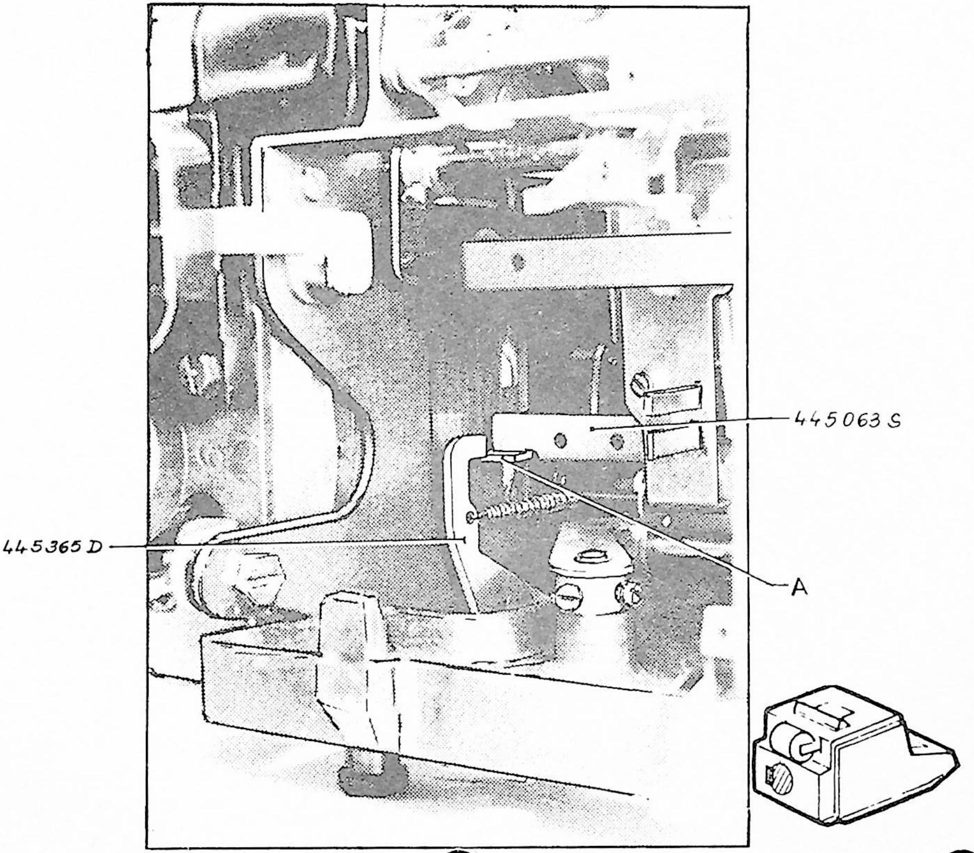
- Complete cycle
- Install bottom pan

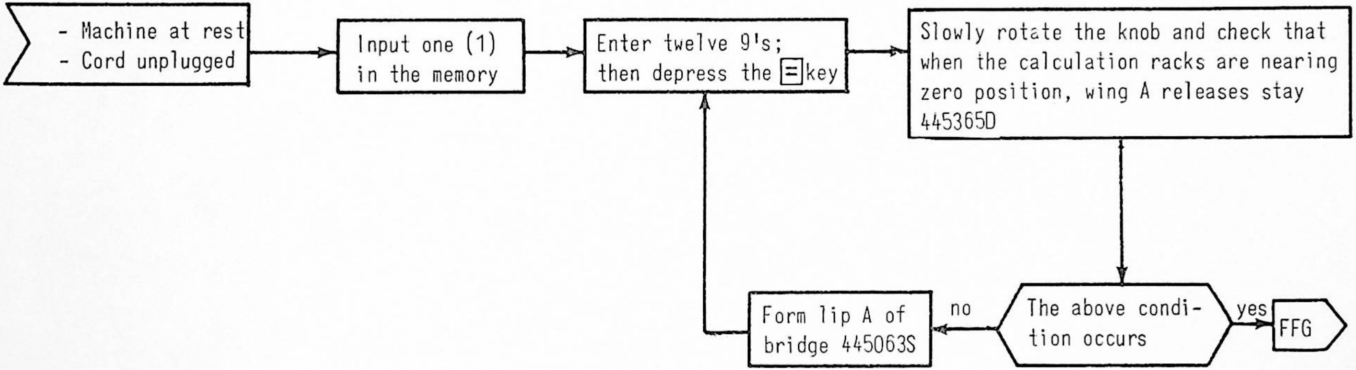
FFG

②

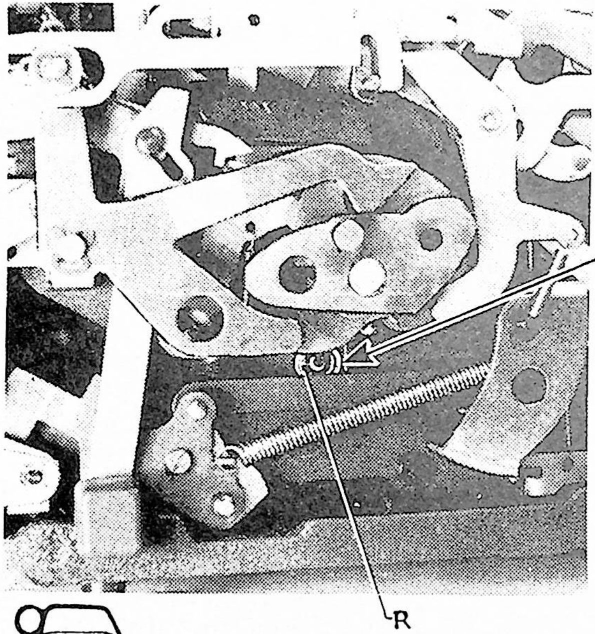


MULTIPLICATION ESCAPEMENT CONTROL STAY ADJUSTMENT

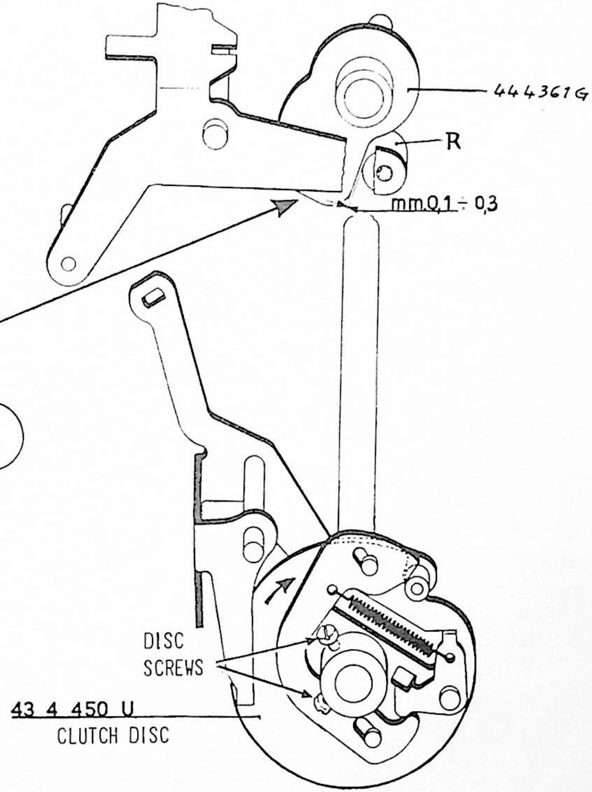


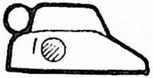

- Machine at rest
- Cord unplugged
Input one (1) in the memory
Enter twelve 9's; then depress the = key
Slowly rotate the knob and check that when the calculation racks are nearing zero position, wing A releases stay 445365D
The above condition occurs
yes
FFG
no
Form lip A of bridge 445063S

CLUTCH DISC 434450U ANGULAR ADJUSTMENT



①





- Machine at rest
- Cord unplugged

Move knob and check angular play of main shaft by verifying the clearance between roller R and cam 444361G (fig. 1)

The play is from 0.1 to 0.3 mm

yes → FFG

no → Remove bottom pan

Enter a number and depress the (NA) non-add key

Loosen both screws on clutch disc 434450U (fig. 1 & 2). (Rotate main shaft to make both screws accessible)

Rotate main shaft to bring the cam 444361G and roller R in the position shown in fig. 1 and maintain it in that position

Observe the machine as shown by fig. 2
Use screwdriver and push motor disc 434450U in the direction shown by the arrow (fig.1) and hold it in that position (completely restored)

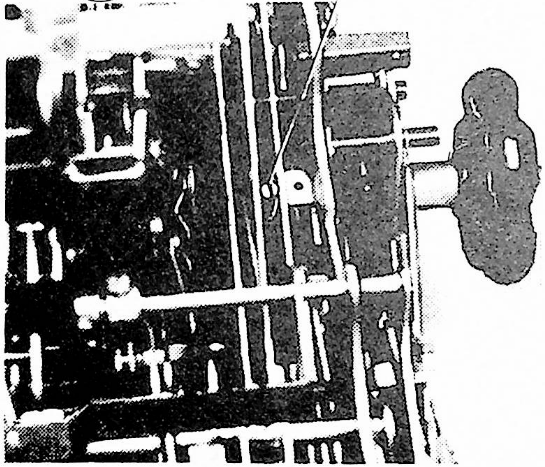
Tighten fully the accessible set screw of disc 434450U (fig. 1 & 2)

Enter a number; then depress the (NA) key

Rotate main shaft in order to tighten other screw of disc

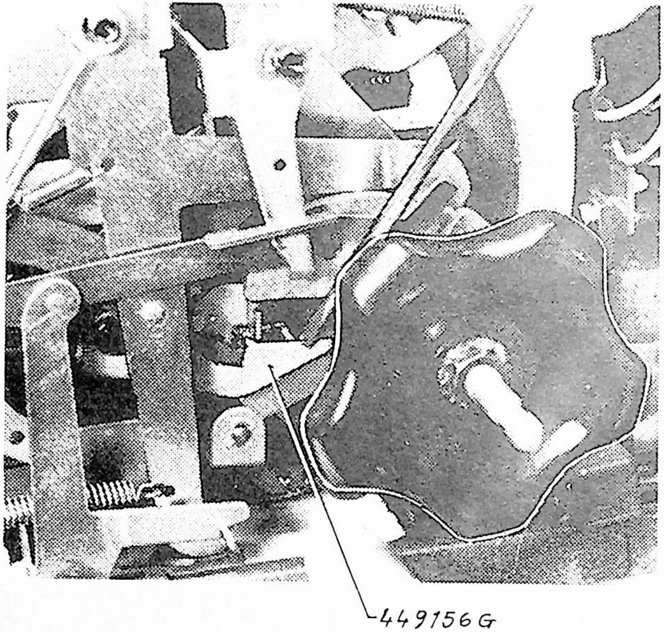
Complete cycle → Move knob and check angular play of main shaft

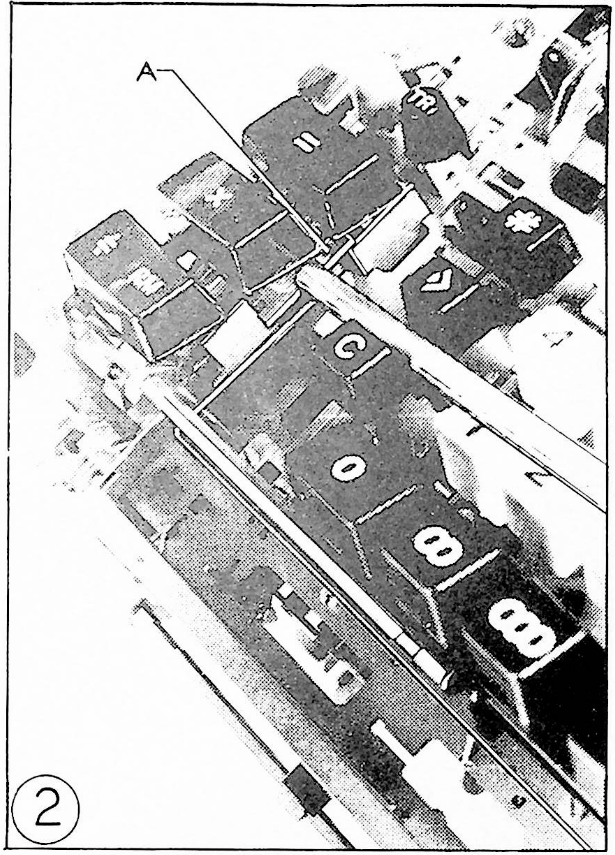
②



MC26 - SELECTION BRIDGE 449327B ADJUSTMENT

①





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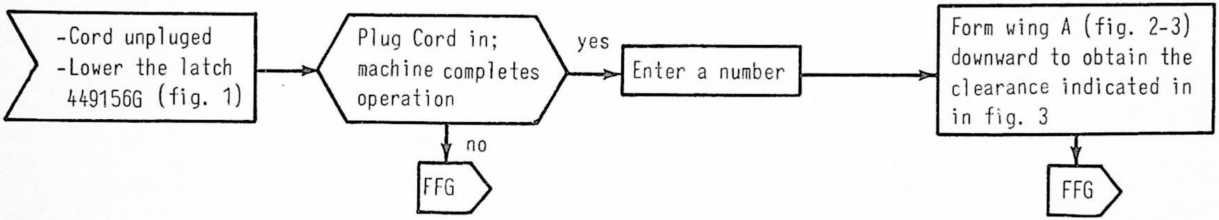
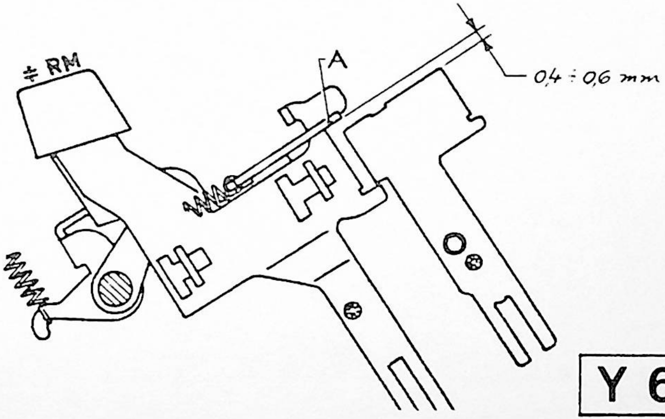

-Cord unpluged
-Lower the latch 449156G (fig. 1)
Plug Cord in; machine completes operation
yes
no
FFG
Enter a number
Form wing A (fig. 2-3) downward to obtain the clearance indicated in in fig. 3
FFG

③


÷ RM
A
0,4 ÷ 0,6 mm

MC24 - CALCULATION AND TOTAL SLIDERS CONTROL CRANK 695980W

Y7

- Machine at rest
- Cord unplugged

Depress black [T] key. Activate precycle

Axially move crank 695980W in a manner to have its wings centered in respect to sliders 444014Q and 444015R (fig. 1). Tighten the set screws friction tight

Adjust crank 695980W angularly on the shaft in a manner to have a clearance of 0.3 to 0.4 mm in respect to left slider (fig. 2)

Complete cycle

The machine is a Tetractys

yes

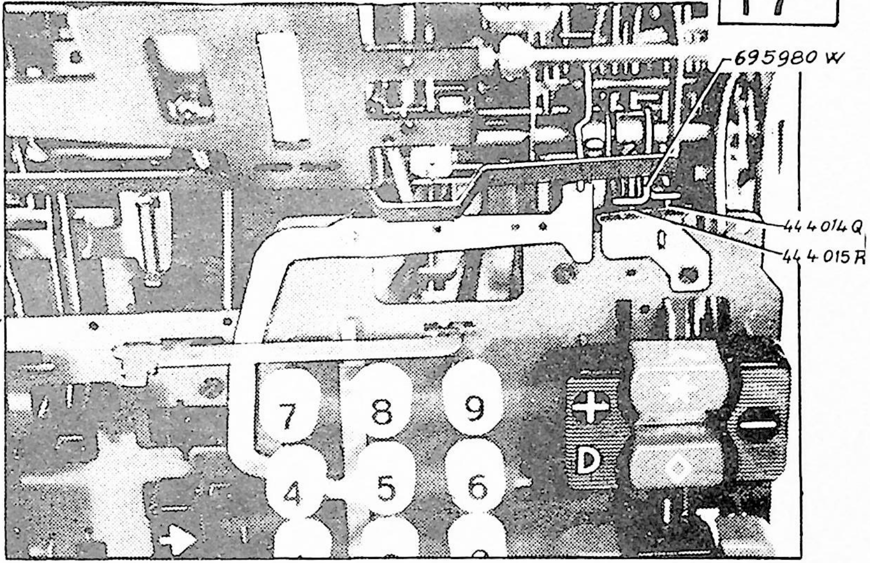
no

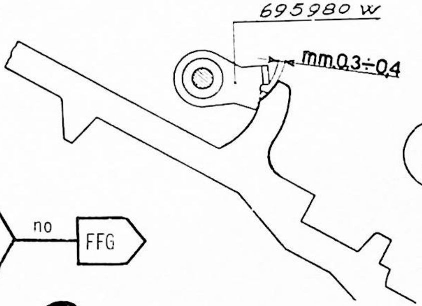
Plug cord in; machine completes operation

yes: Y68

no: FFG

①





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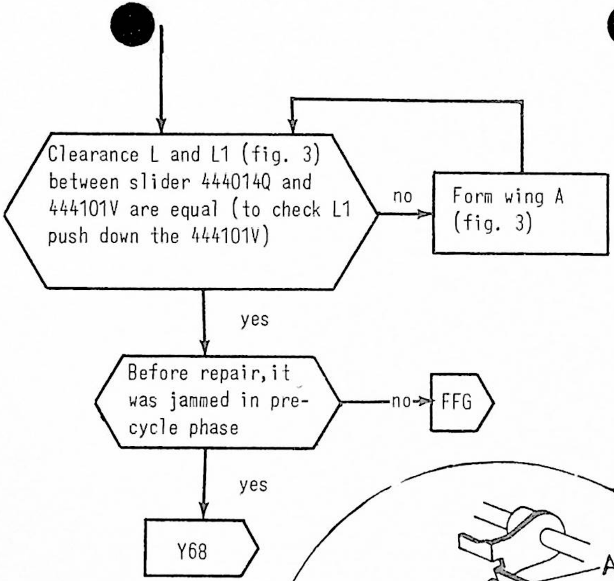


Clearance L and L1 (fig. 3) between slider 444014Q and 444101V are equal (to check L1 push down the 444101V)

no → Form wing A (fig. 3)

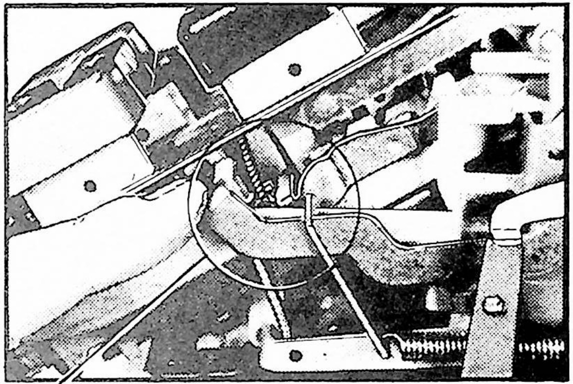
yes ↓

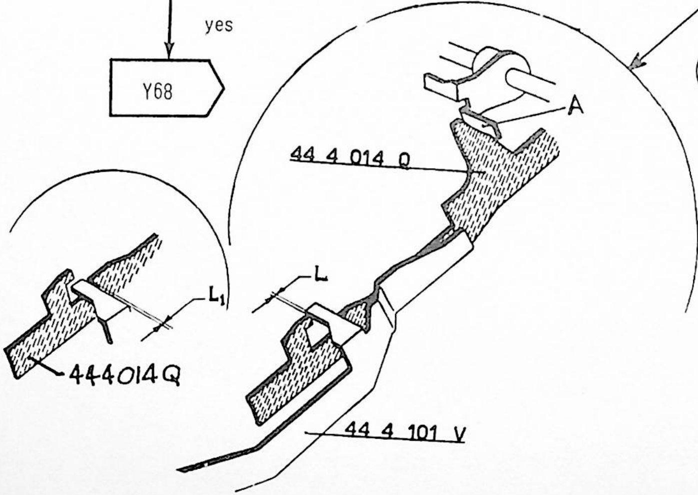
Before repair, it was jammed in pre-cycle phase

no → FFG

yes ↓

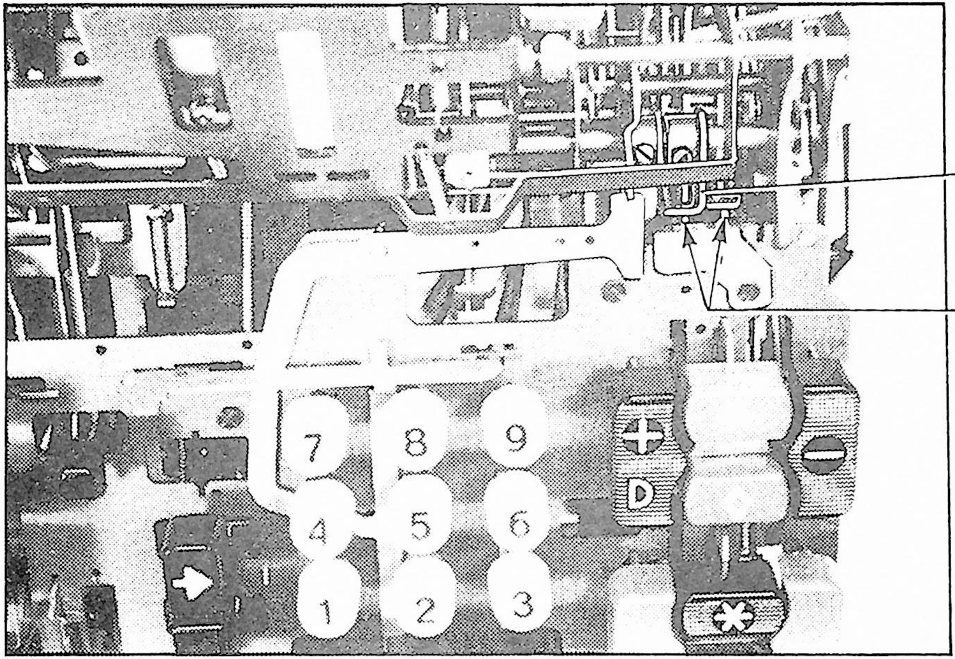
Y68

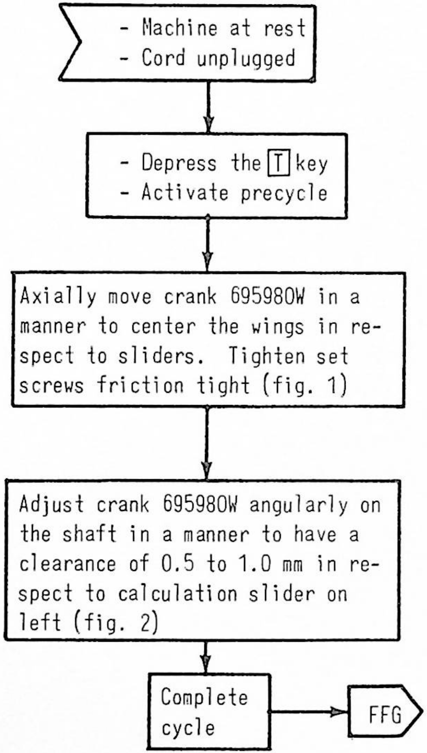




③

MC26 - CALCULATION AND TOTAL SLIDERS CONTROL CRANK 695980W





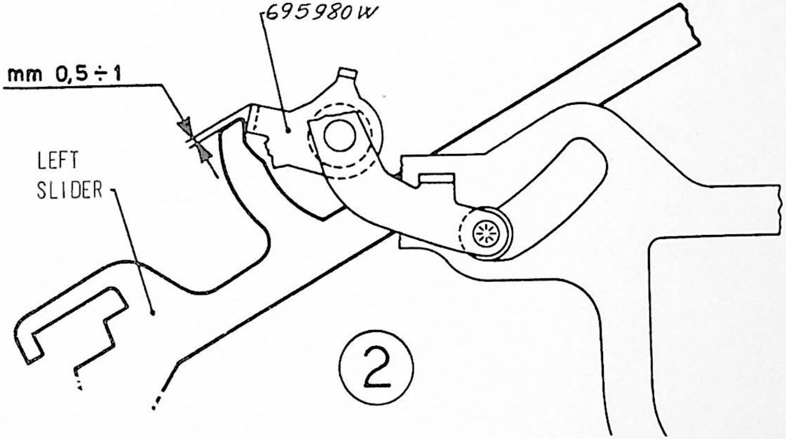
- Machine at rest
- Cord unplugged

- Depress the T key
- Activate precycle

Axially move crank 695980W in a manner to center the wings in respect to sliders. Tighten set screws friction tight (fig. 1)

Adjust crank 695980W angularly on the shaft in a manner to have a clearance of 0.5 to 1.0 mm in respect to calculation slider on left (fig. 2)

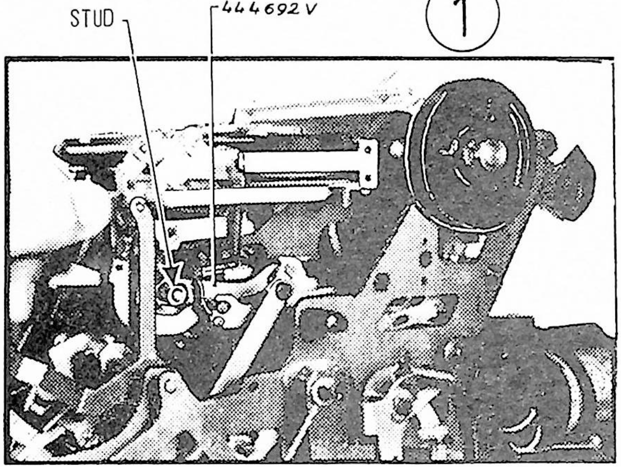
Complete cycle



②

REGISTER ENGAGEMENT AND DISENGAGEMENT CONTROL CRANK 444692V ADJUSTMENT

①



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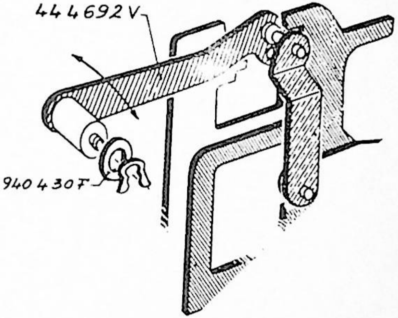


Manually rotate bridge P in direction of arrow (Fig 3)

- Manually move the stud of crank 444692V (fig. 1) to the intermediate position (register disengaged)

- Manually activate precycle
- Complete cycle

Use springhook to move crank 444692V. Check that it has less than 0.3 mm axial play

The axial play of the crank 444692V is less than 0.3 mm

yes

no

Add a washer (less than 0.2 mm thickness) 940430F (fig. 2) to reduce the play

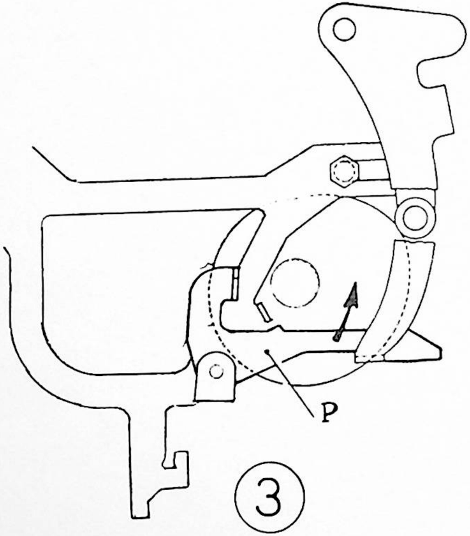
Before inspection the machine was jammed in precycle

no

FFG

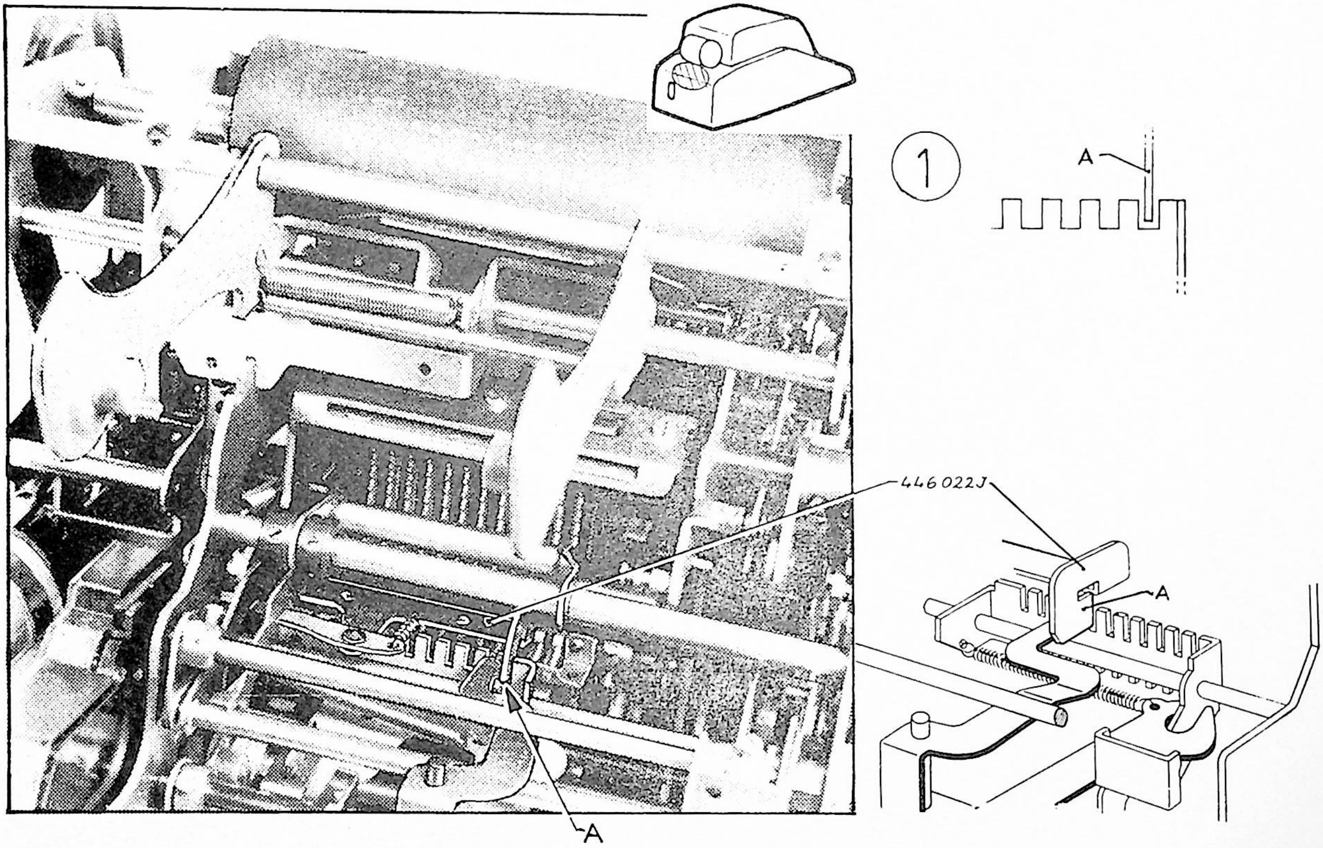
yes

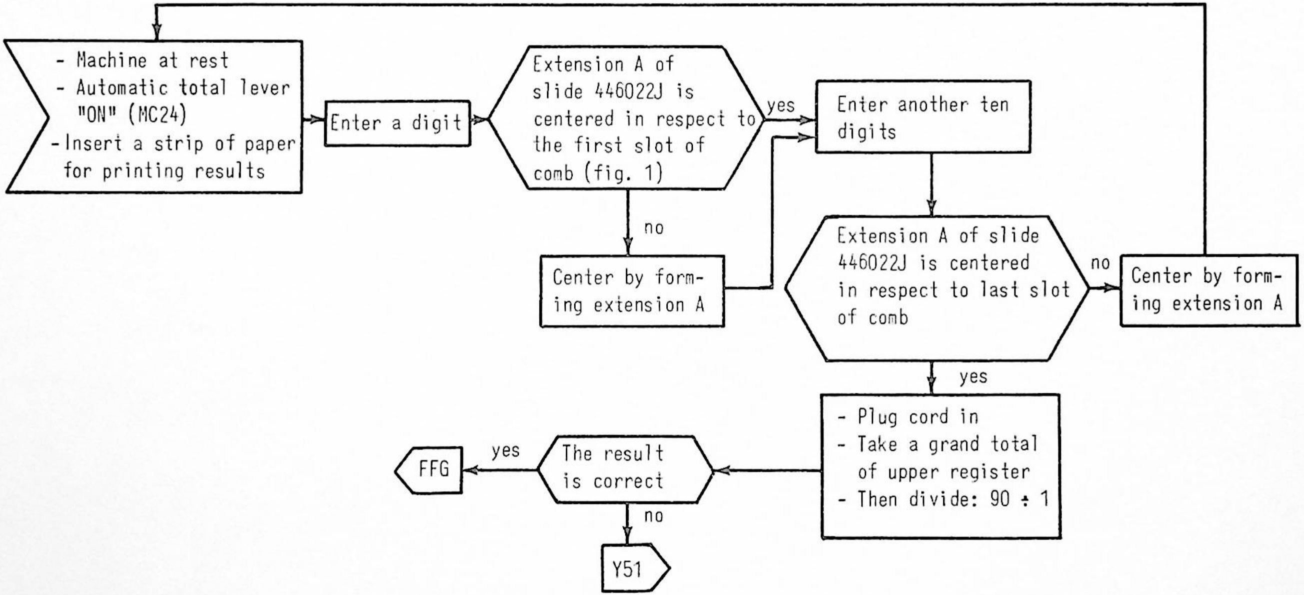
Y68



③

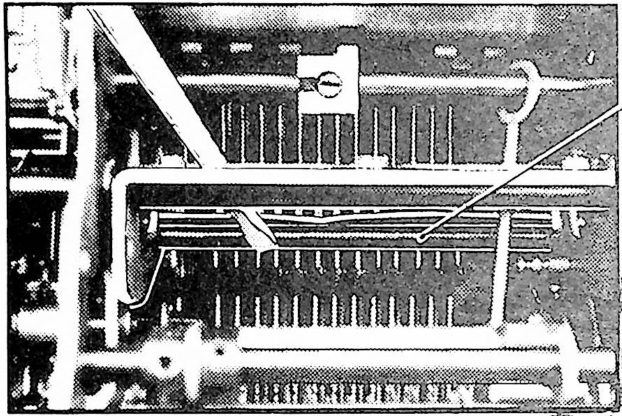
QUOTIENT COUNTER SLIDE 446022J CENTERING

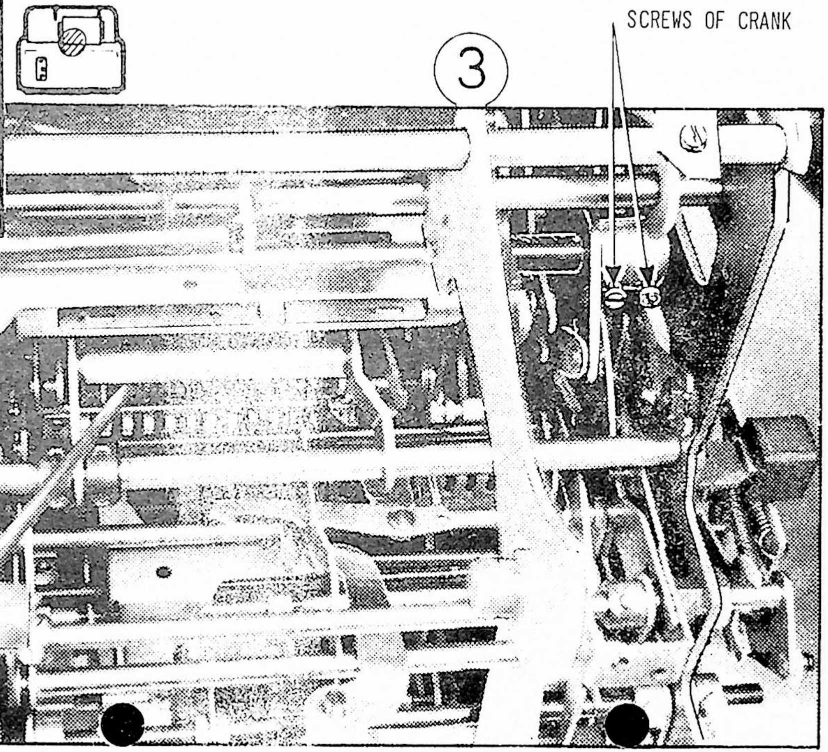


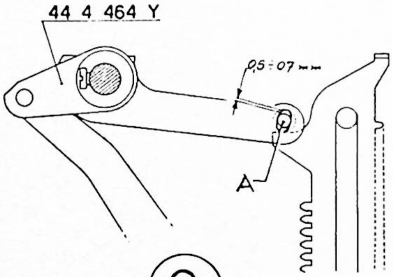

- Machine at rest
- Automatic total lever "ON" (MC24)
- Insert a strip of paper for printing results
Enter a digit
Extension A of slide 446022J is centered in respect to the first slot of comb (fig. 1)
yes
no
Center by forming extension A
Enter another ten digits
Extension A of slide 446022J is centered in respect to last slot of comb
no
Center by forming extension A
yes
- Plug cord in
- Take a grand total of upper register
- Then divide: 90 ÷ 1
The result is correct
yes
FFG
no
Y51

UNIVERSAL BAR 444765D ADJUSTMENT

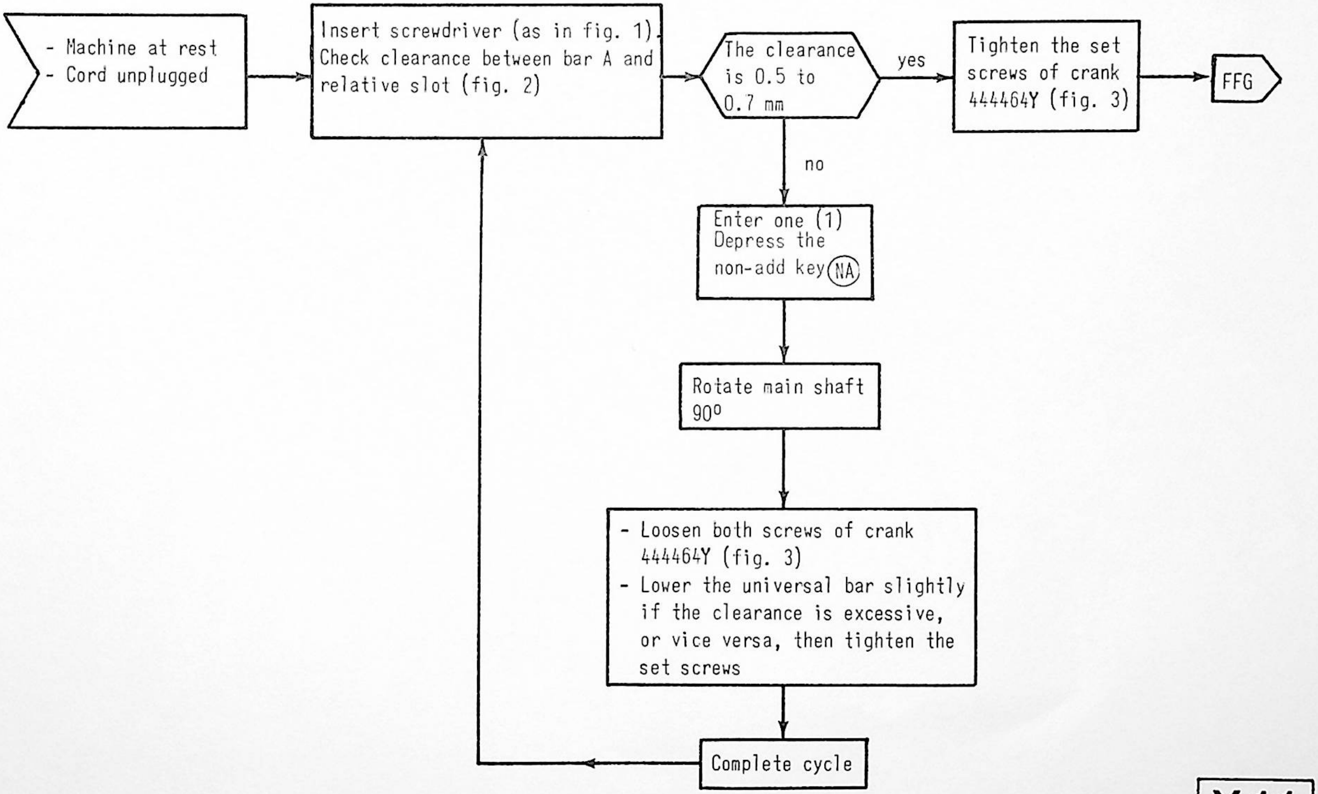
Y11







②



- Machine at rest
- Cord unplugged

Insert screwdriver (as in fig. 1). Check clearance between bar A and relative slot (fig. 2)

The clearance is 0.5 to 0.7 mm

Tighten the set screws of crank 444464Y (fig. 3)

FFG

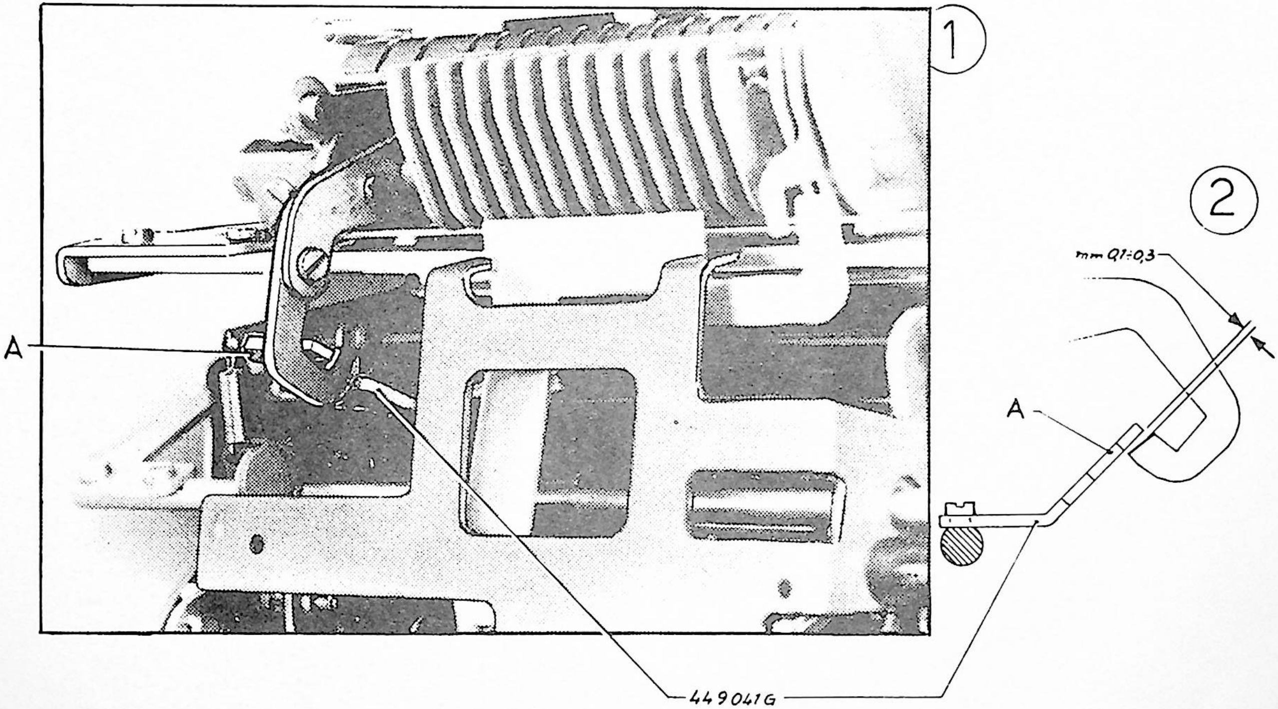
Enter one (1) Depress the non-add key (NA)

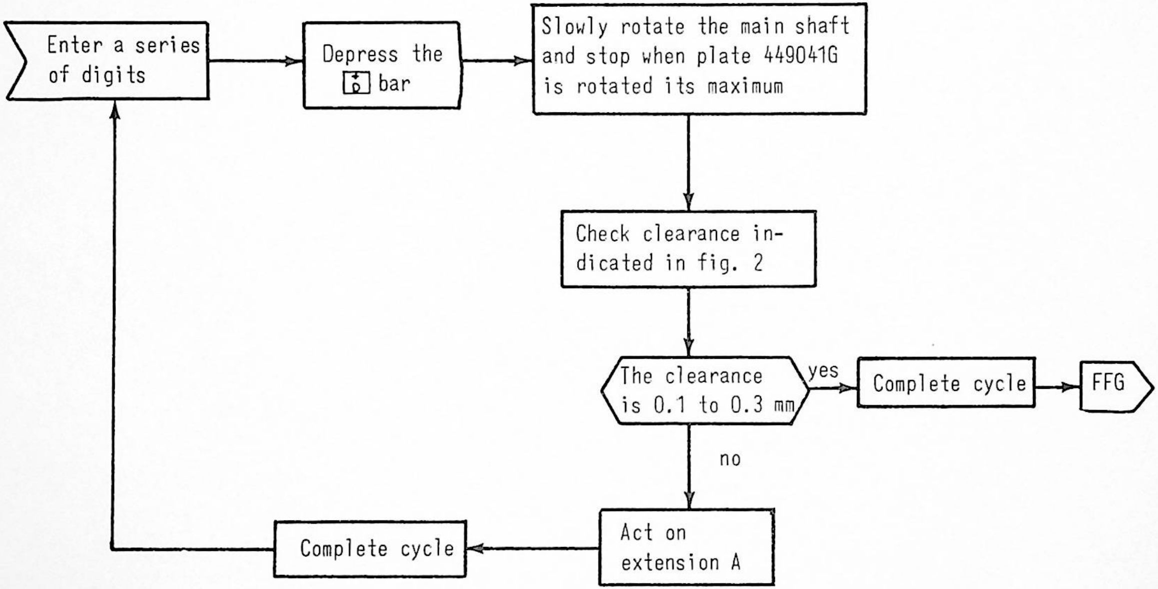
Rotate main shaft 90°

- Loosen both screws of crank 444464Y (fig. 3)
- Lower the universal bar slightly if the clearance is excessive, or vice versa, then tighten the set screws

Complete cycle

MC26 - PRINT COMMAND PLATE 449041G WORKING POSITION ADJUSTMENT

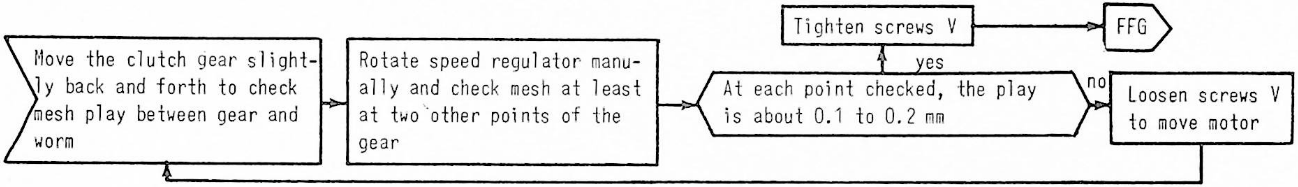



Enter a series of digits
Depress the +D bar
Slowly rotate the main shaft and stop when plate 449041G is rotated its maximum
Check clearance indicated in fig. 2
The clearance is 0.1 to 0.3 mm
yes
Complete cycle
FFG
no
Act on extension A
Complete cycle

MOTOR WORM AND FIBER GEAR MESH ADJUSTMENT

1 BRUSH TYPE MOTOR

(Before making adjustment check that the gear is not excessively worn - otherwise send machine to shop)



Move the clutch gear slightly back and forth to check mesh play between gear and worm

Rotate speed regulator manually and check mesh at least at two other points of the gear

At each point checked, the play is about 0.1 to 0.2 mm

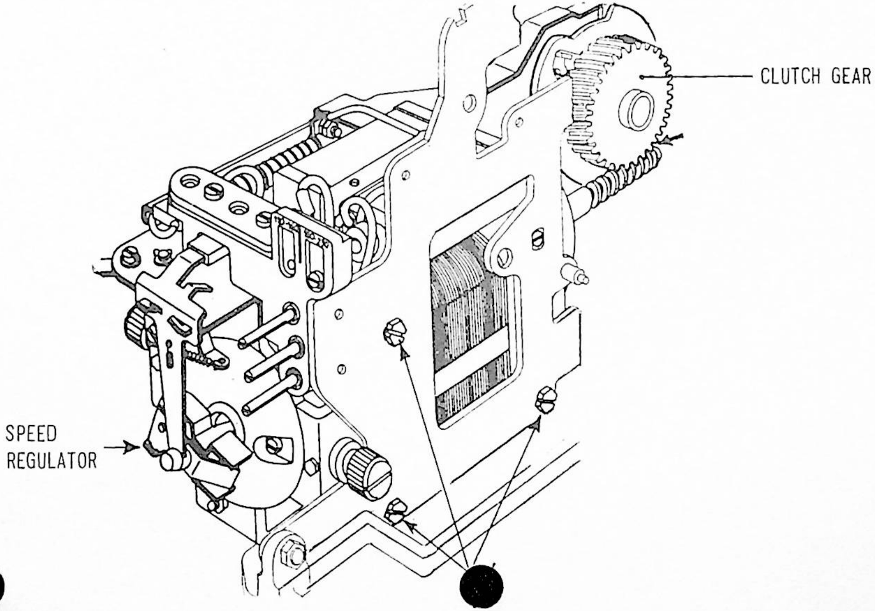
yes

Tighten screws V

FFG

no

Loosen screws V to move motor



2 INDUCTION TYPE MOTOR

(Before making adjustment, check that the gear is not excessively worn - otherwise send machine to shop)

Move the clutch gear back and forth slightly to check mesh play between the gear and worm

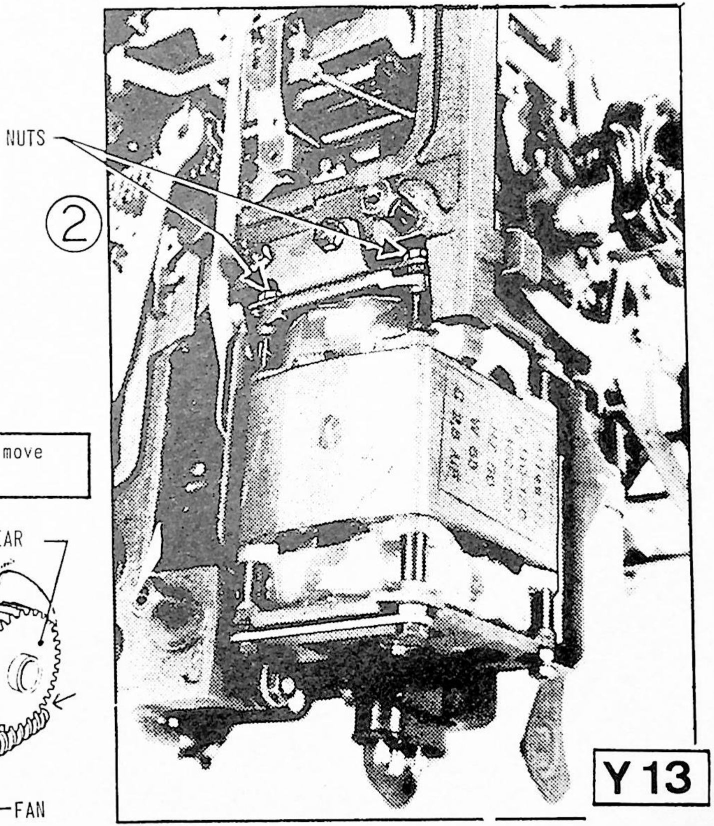
Rotate fan (fig. 1) manually and check mesh at, at least, two other points of the gear

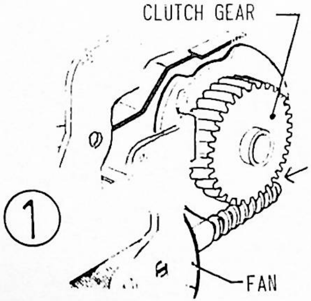
At each point checked the play is about 0.1 to 0.2 mm

no → Loosen nuts to move motor

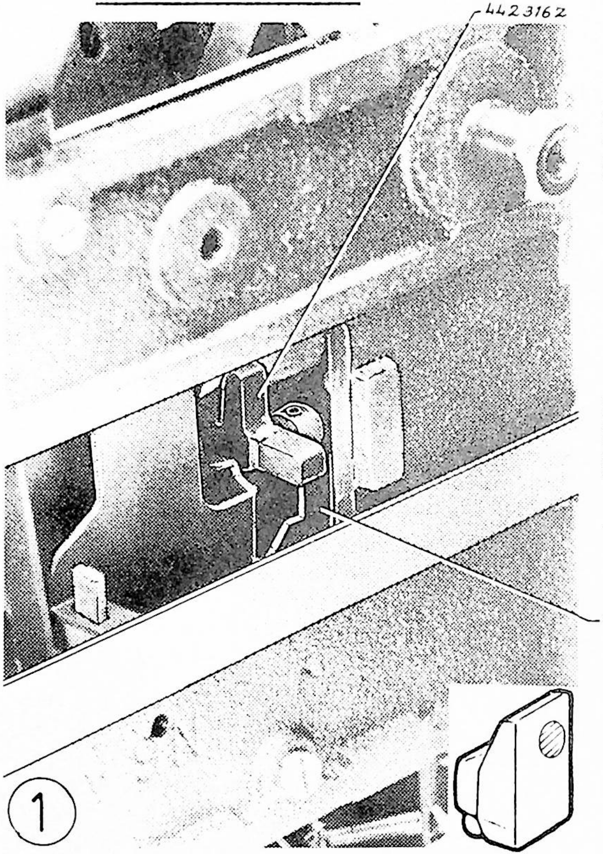
yes → Lock two front nuts (fig. 2)

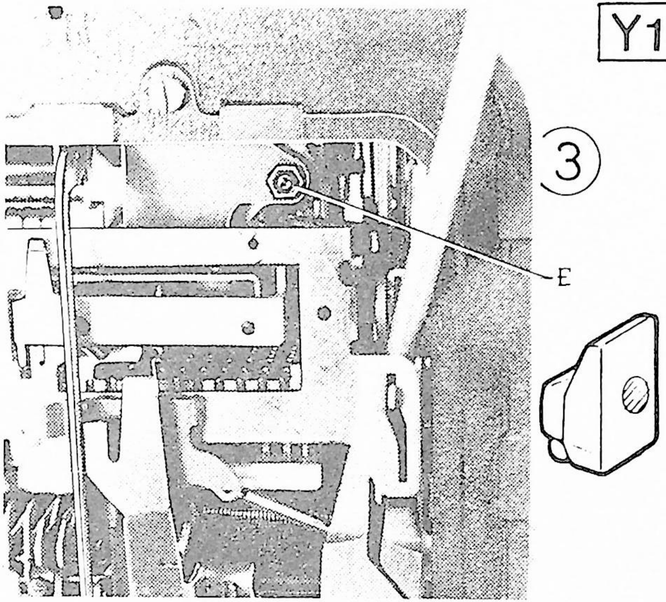
FFG

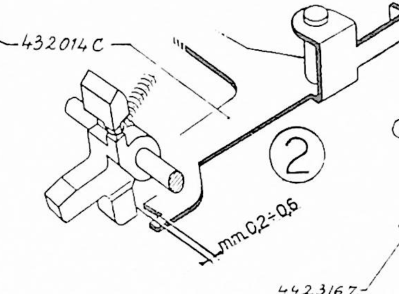


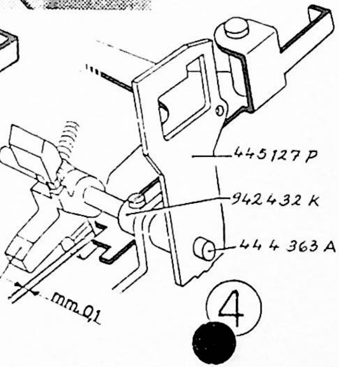


RECIPROCAL LOCK ADJUSTMENT

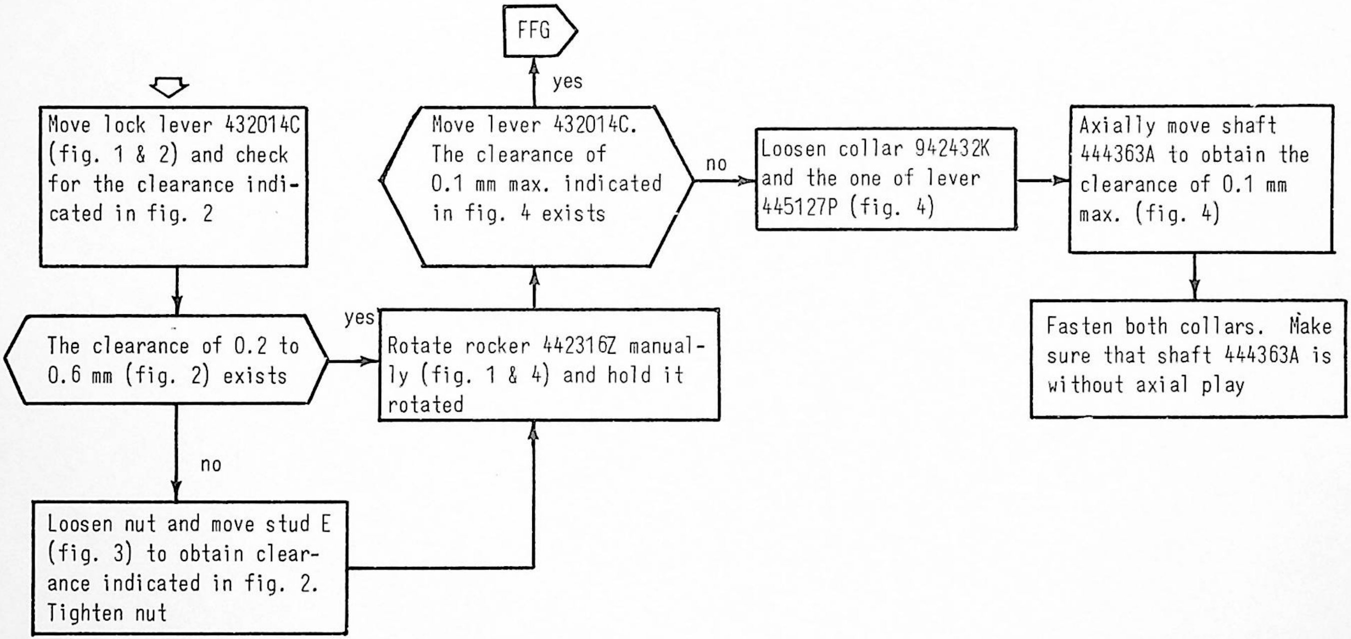








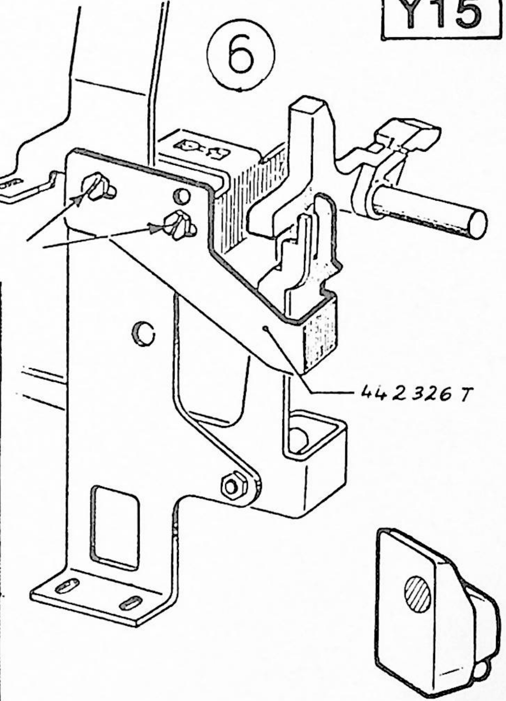
442316Z


Move lock lever 432014C (fig. 1 & 2) and check for the clearance indicated in fig. 2
The clearance of 0.2 to 0.6 mm (fig. 2) exists
yes
no
Loosen nut and move stud E (fig. 3) to obtain clearance indicated in fig. 2. Tighten nut
Rotate rocker 442316Z manually (fig. 1 & 4) and hold it rotated
Move lever 432014C. The clearance of 0.1 mm max. indicated in fig. 4 exists
yes
FFG
no
Loosen collar 942432K and the one of lever 445127P (fig. 4)
Axially move shaft 444363A to obtain the clearance of 0.1 mm max. (fig. 4)
Fasten both collars. Make sure that shaft 444363A is without axial play

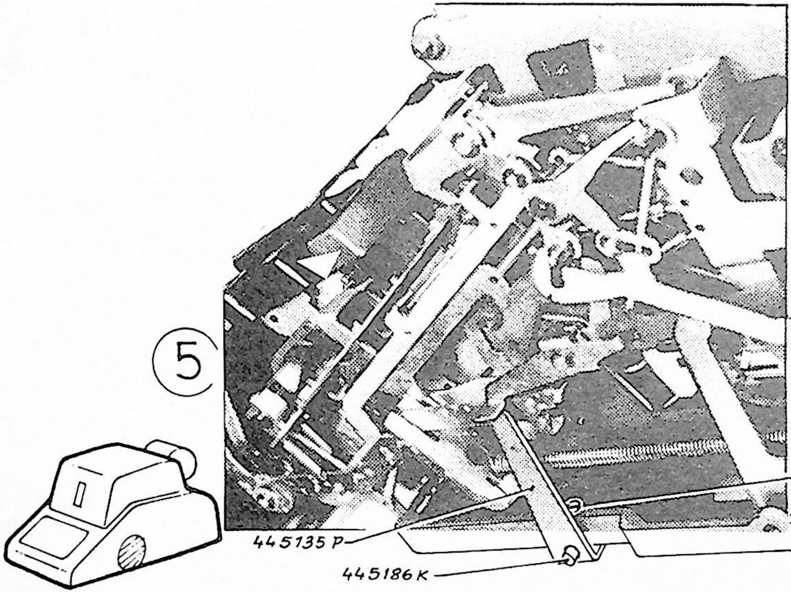
RECIPROCAL LOCK ADJUSTMENT

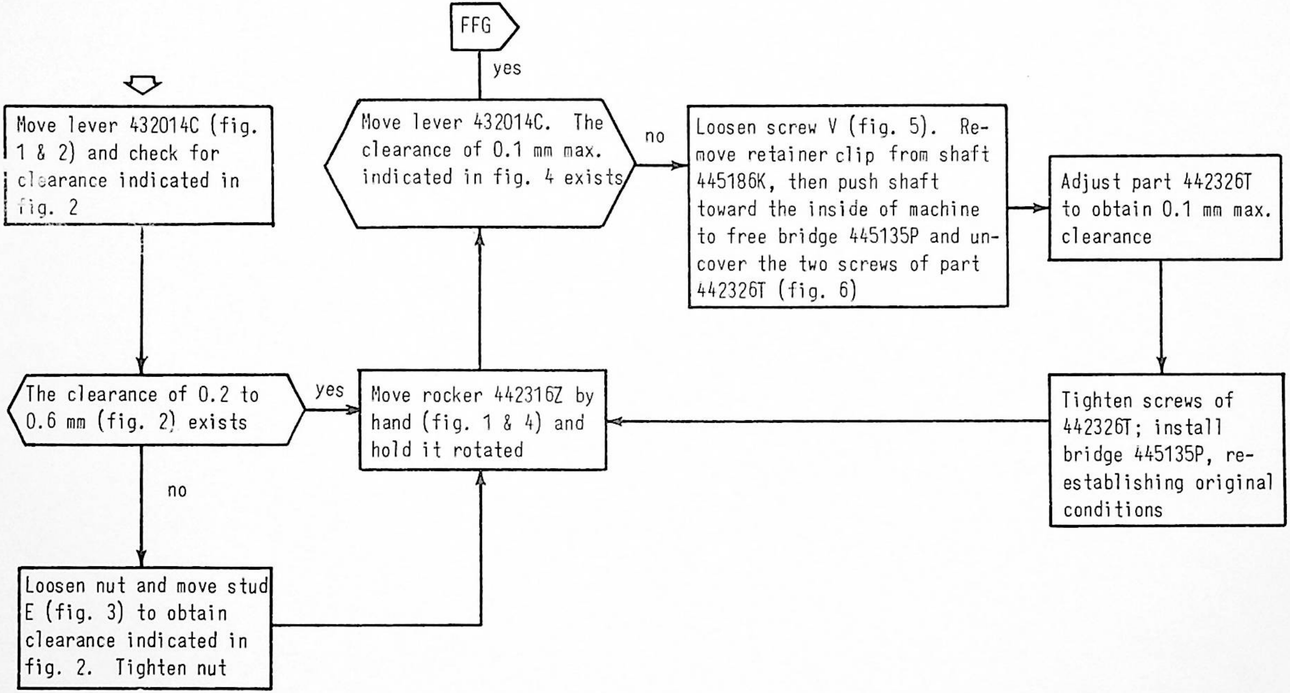
For fig. 1,2,3 & 4
see Y14

⑥



⑤





Move lever 432014C (fig. 1 & 2) and check for clearance indicated in fig. 2

The clearance of 0.2 to 0.6 mm (fig. 2) exists

Loosen nut and move stud E (fig. 3) to obtain clearance indicated in fig. 2. Tighten nut

Move rocker 442316Z by hand (fig. 1 & 4) and hold it rotated

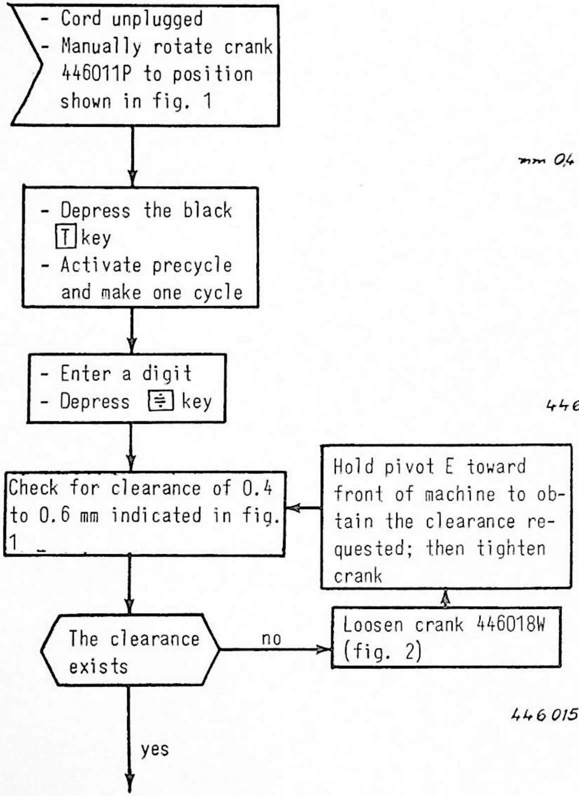
Move lever 432014C. The clearance of 0.1 mm max. indicated in fig. 4 exists

Loosen screw V (fig. 5). Remove retainer clip from shaft 445186K, then push shaft toward the inside of machine to free bridge 445135P and uncover the two screws of part 442326T (fig. 6)

Adjust part 442326T to obtain 0.1 mm max. clearance

Tighten screws of 442326T; install bridge 445135P, reestablishing original conditions

TABULATION CONTROL HOLDING PLATE 446001W RESTORE ADJUSTMENT



- Cord unplugged
- Manually rotate crank 446011P to position shown in fig. 1

- Depress the black T key
- Activate precycle and make one cycle

- Enter a digit
- Depress ≑ key

Check for clearance of 0.4 to 0.6 mm indicated in fig. 1

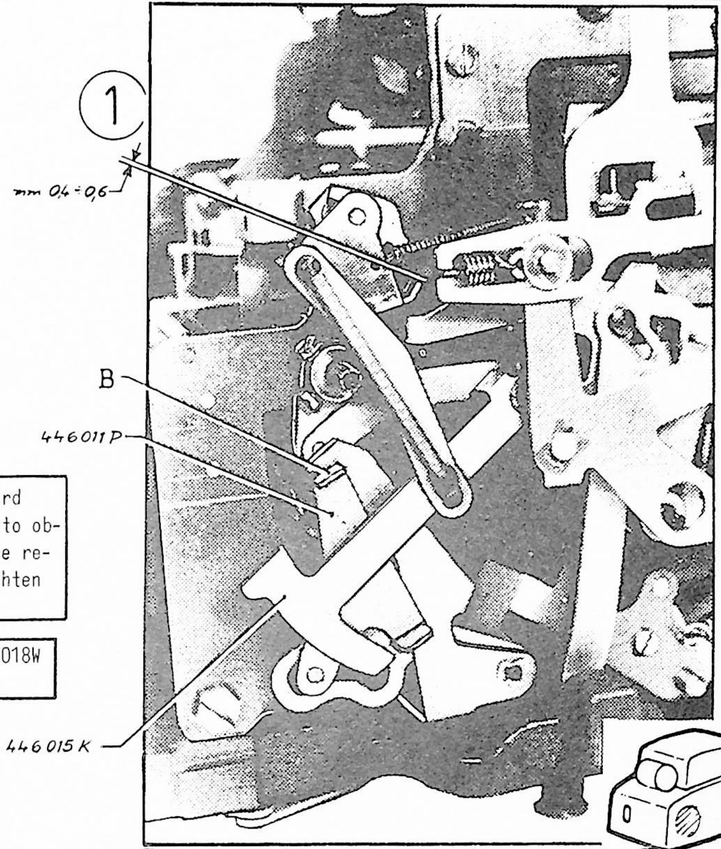
The clearance exists

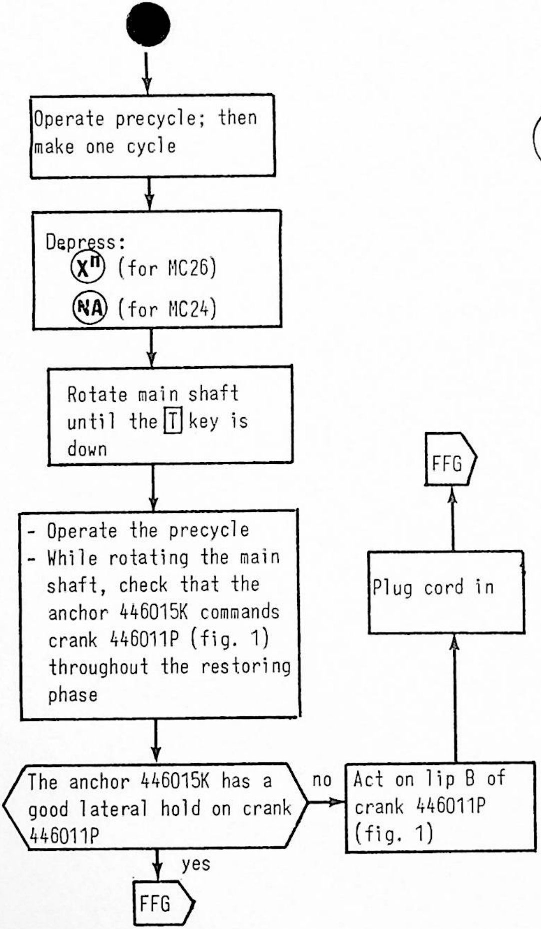
no

Loosen crank 446018W (fig. 2)

Hold pivot E toward front of machine to obtain the clearance requested; then tighten crank

yes





Operate precycle; then make one cycle

Depress:
X^{n} (for MC26)
NA (for MC24)

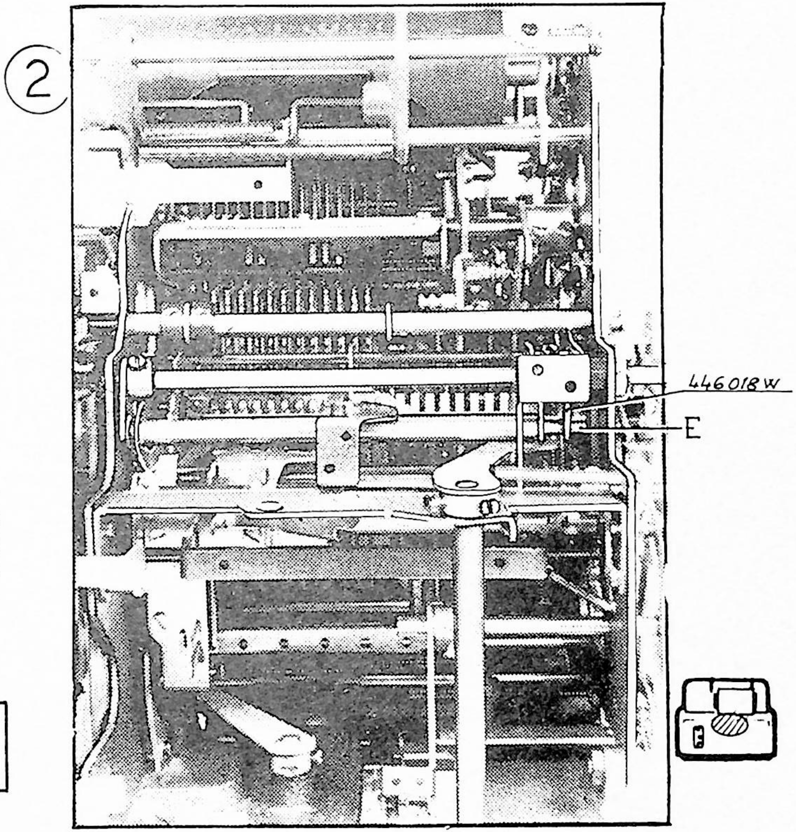
Rotate main shaft until the T key is down

- Operate the precycle
- While rotating the main shaft, check that the anchor 446015K commands crank 446011P (fig. 1) throughout the restoring phase

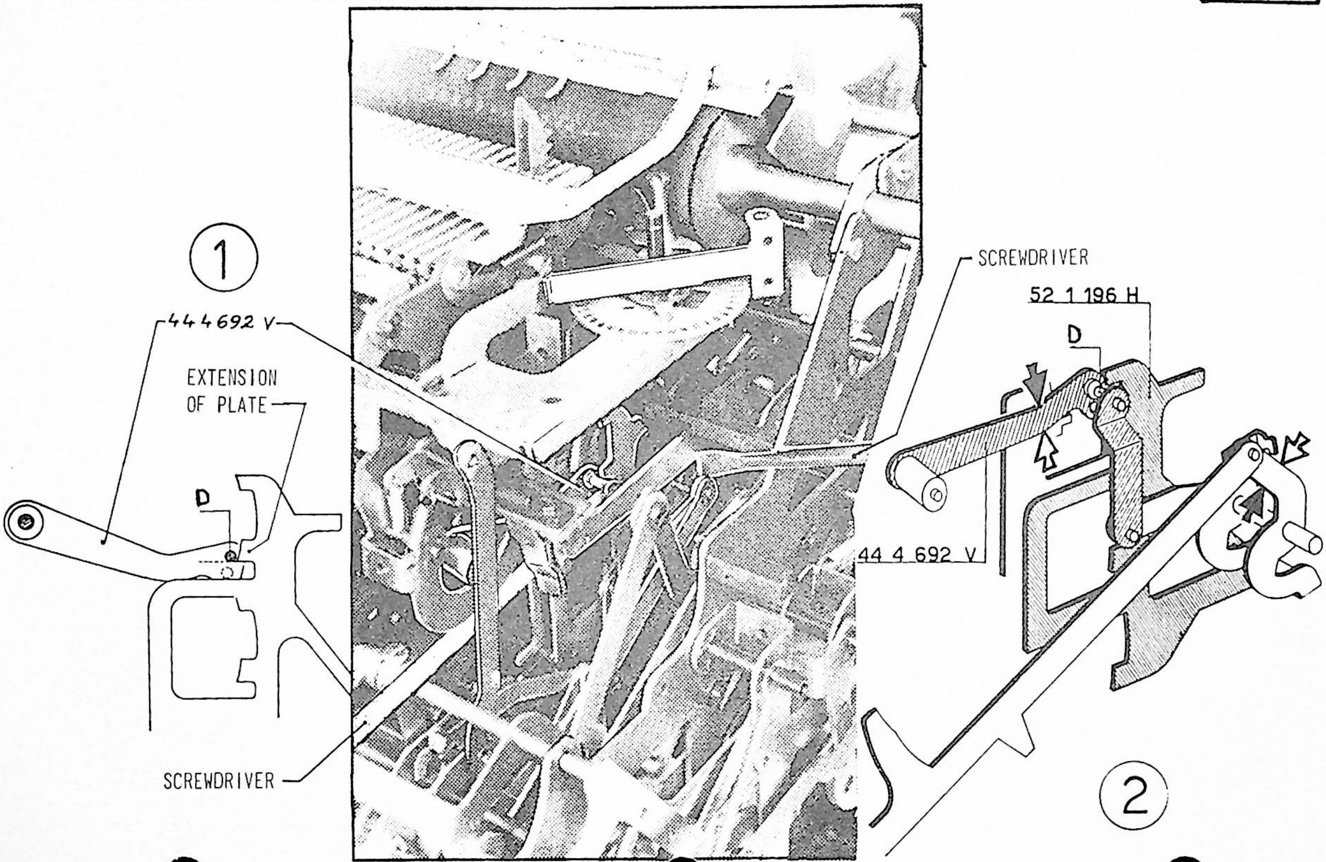
The anchor 446015K has a good lateral hold on crank 446011P

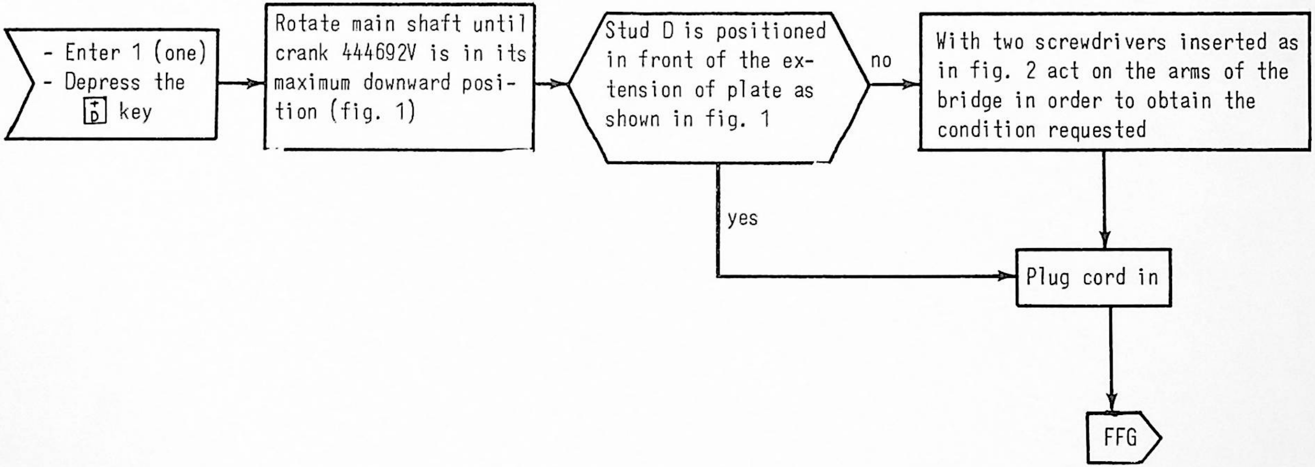
Act on lip B of crank 446011P (fig. 1)

Plug cord in



REGISTER ENGAGEMENT COMMAND CRANK 444692V ADJUSTMENT





- Enter 1 (one)
- Depress the $\boxed{\overset{+}{D}}$ key

Rotate main shaft until crank 444692V is in its maximum downward position (fig. 1)

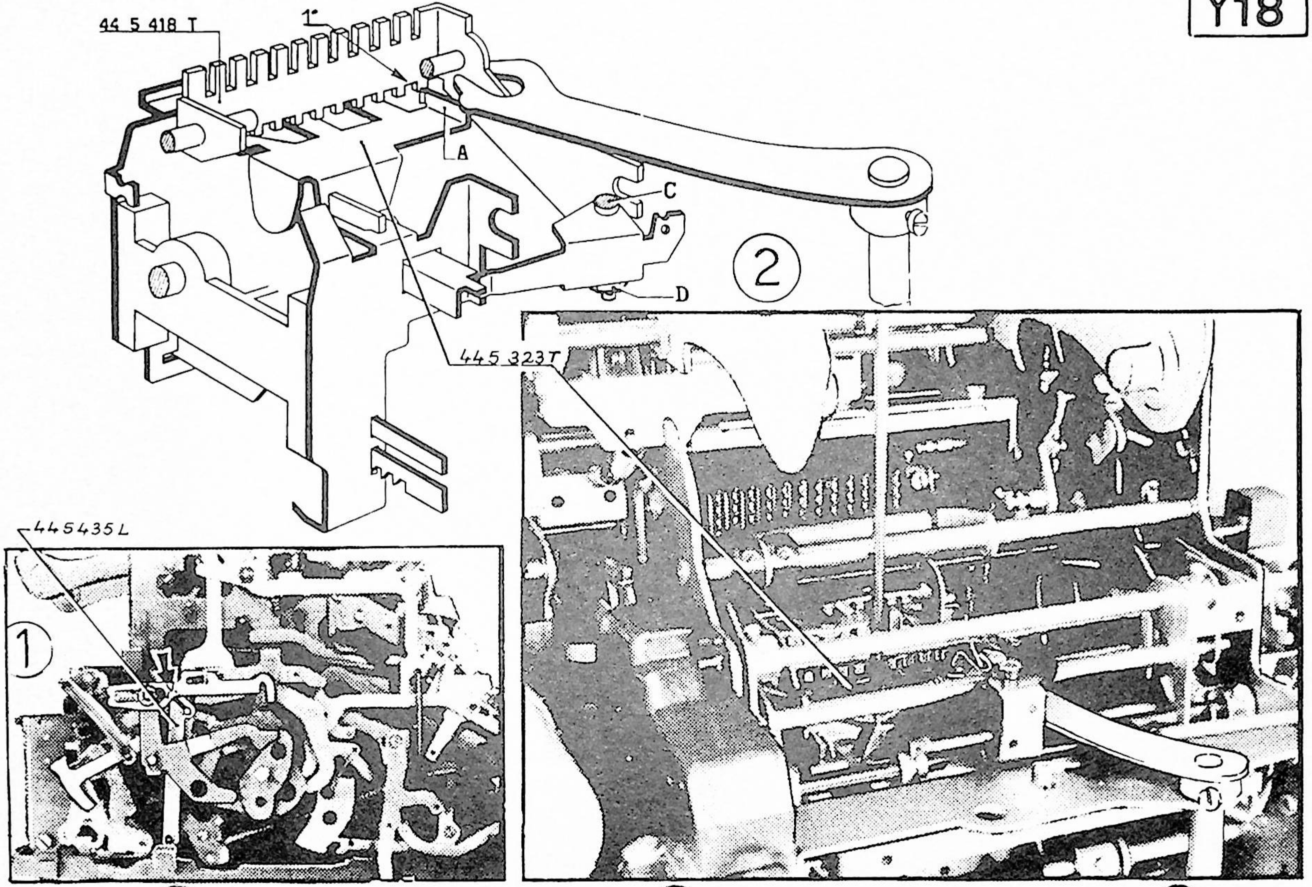
Stud D is positioned in front of the extension of plate as shown in fig. 1

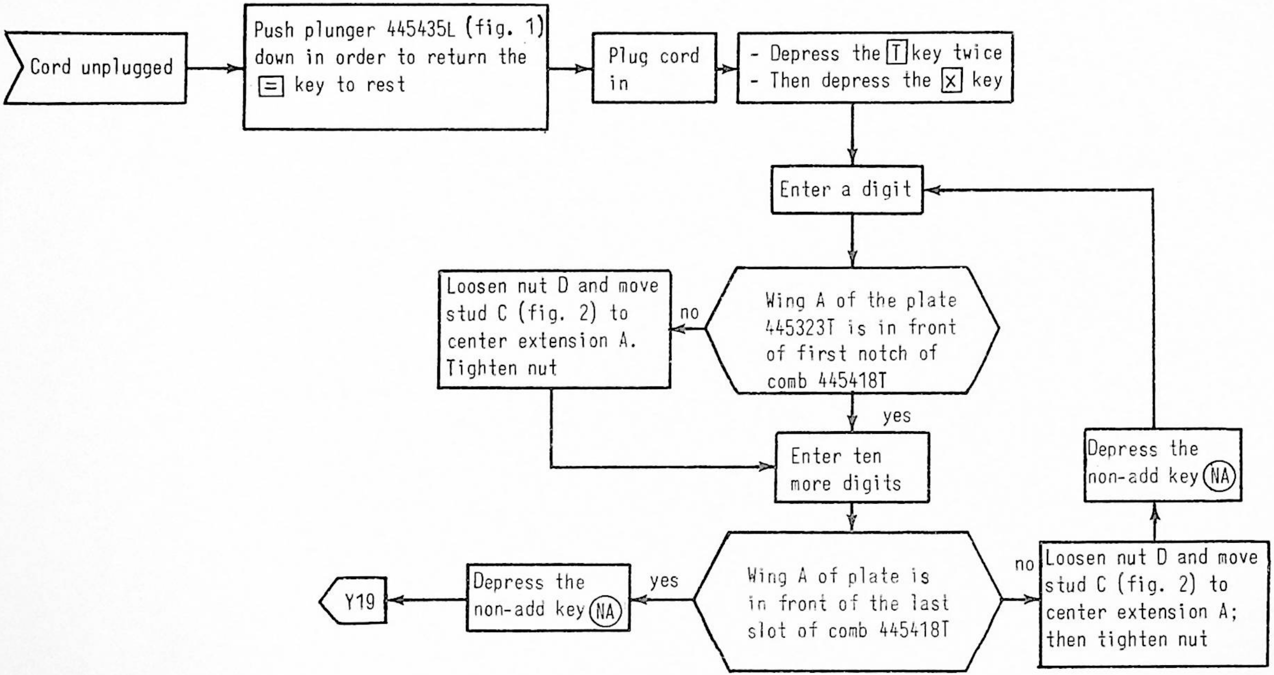
With two screwdrivers inserted as in fig. 2 act on the arms of the bridge in order to obtain the condition requested

Plug cord in

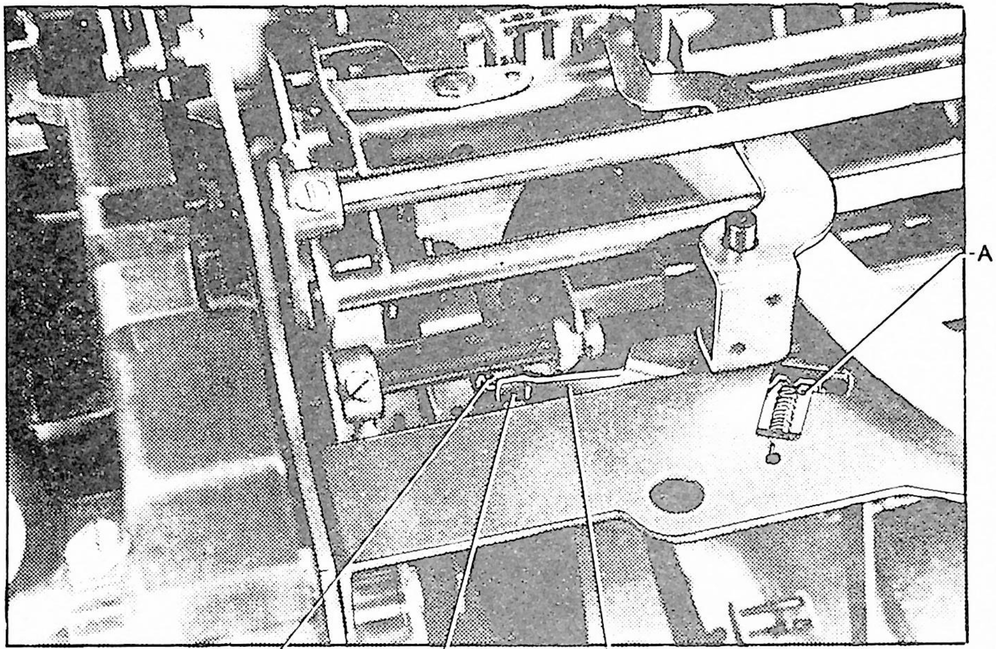
MULTIPLICATION UNIT REST POSITION ADJUSTMENT

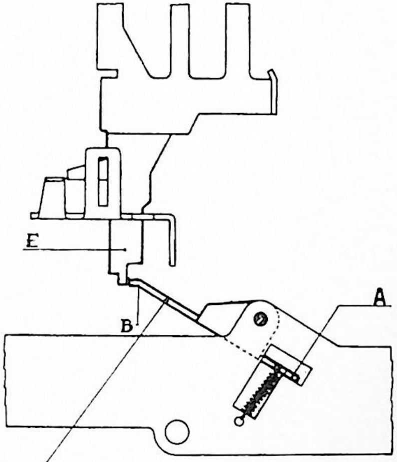
Y18

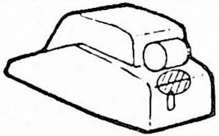


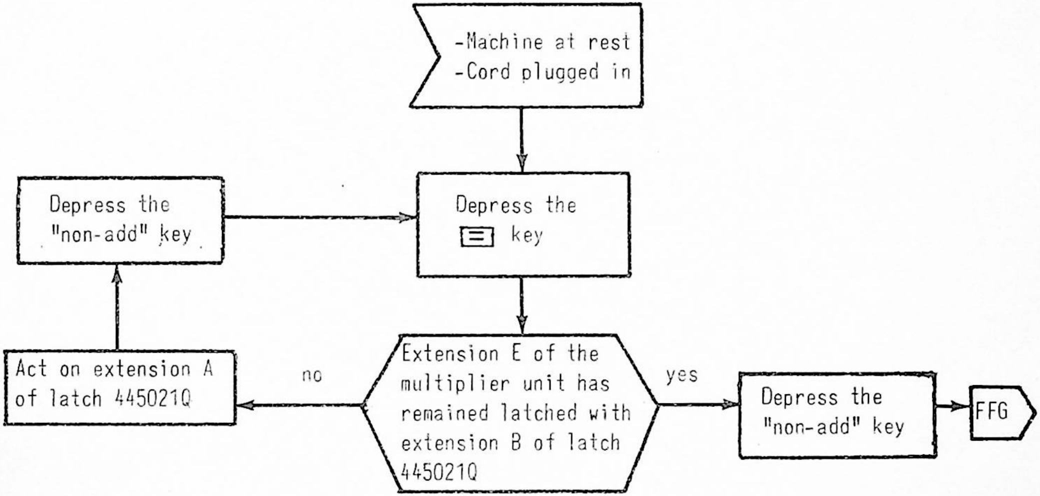

Cord unplugged
Push plunger 445435L (fig. 1) down in order to return the = key to rest
Plug cord in
- Depress the T key twice
- Then depress the x key
Enter a digit
Wing A of the plate 445323T is in front of first notch of comb 445418T
no
Loosen nut D and move stud C (fig. 2) to center extension A. Tighten nut
yes
Enter ten more digits
Wing A of plate is in front of the last slot of comb 445418T
yes
Depress the non-add key NA
Y19
no
Loosen nut D and move stud C (fig. 2) to center extension A; then tighten nut
Depress the non-add key NA

MULTIPLIER UNIT UNLATCHING ADJUSTMENT








-Machine at rest
-Cord plugged in
Depress the "non-add" key
Depress the ≡ key
Act on extension A of latch 445021Q
no
Extension E of the multiplier unit has remained latched with extension B of latch 445021Q
yes
Depress the "non-add" key
FFG

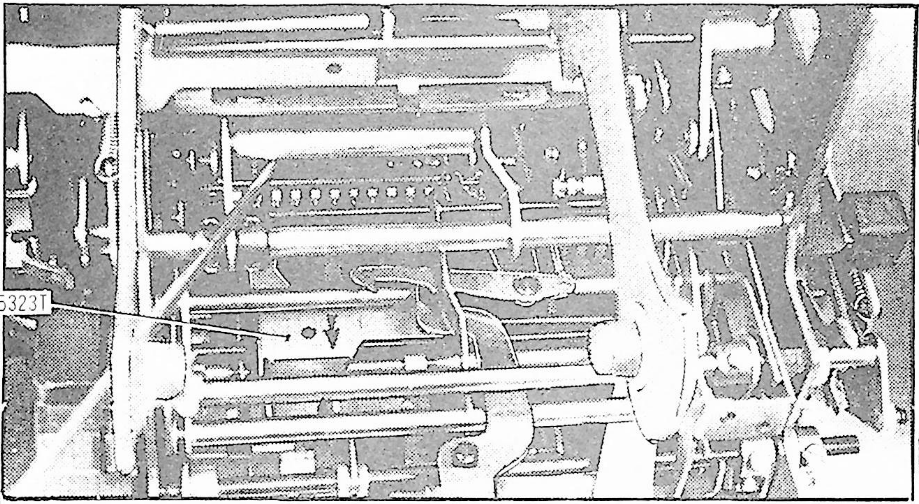
MULTIPLICATION STOP PLUNGER 445435L ADJUSTMENT

Machine at rest

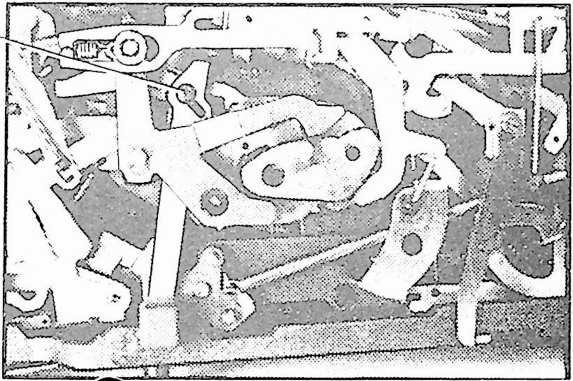
Manually move plate 445323T (fig. 1) toward rear

Enter seven digits

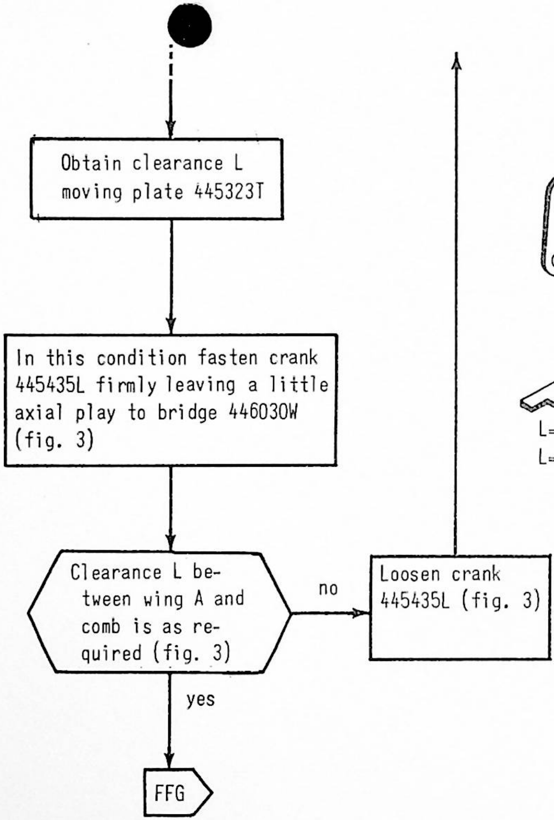
Check that stud 445435L is in upper part of slot (fig. 2)



①



②

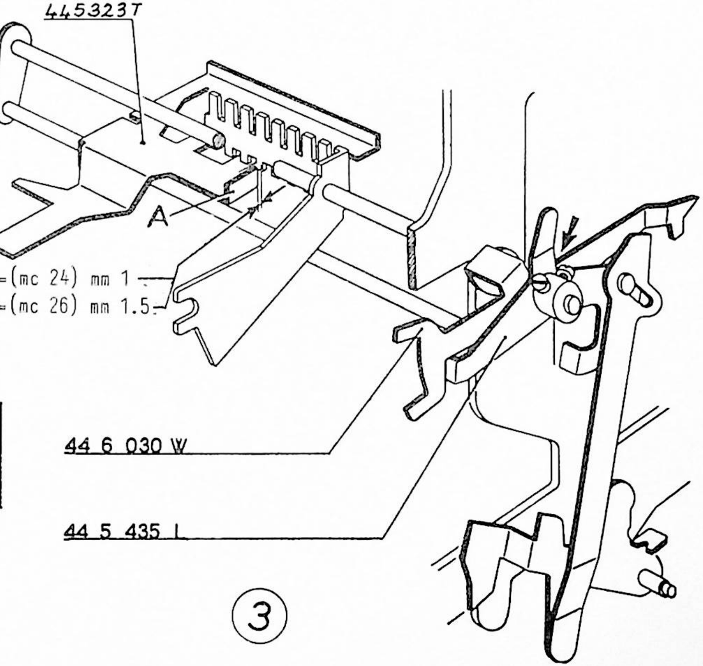


Obtain clearance L moving plate 445323T

In this condition fasten crank 445435L firmly leaving a little axial play to bridge 446030W (fig. 3)

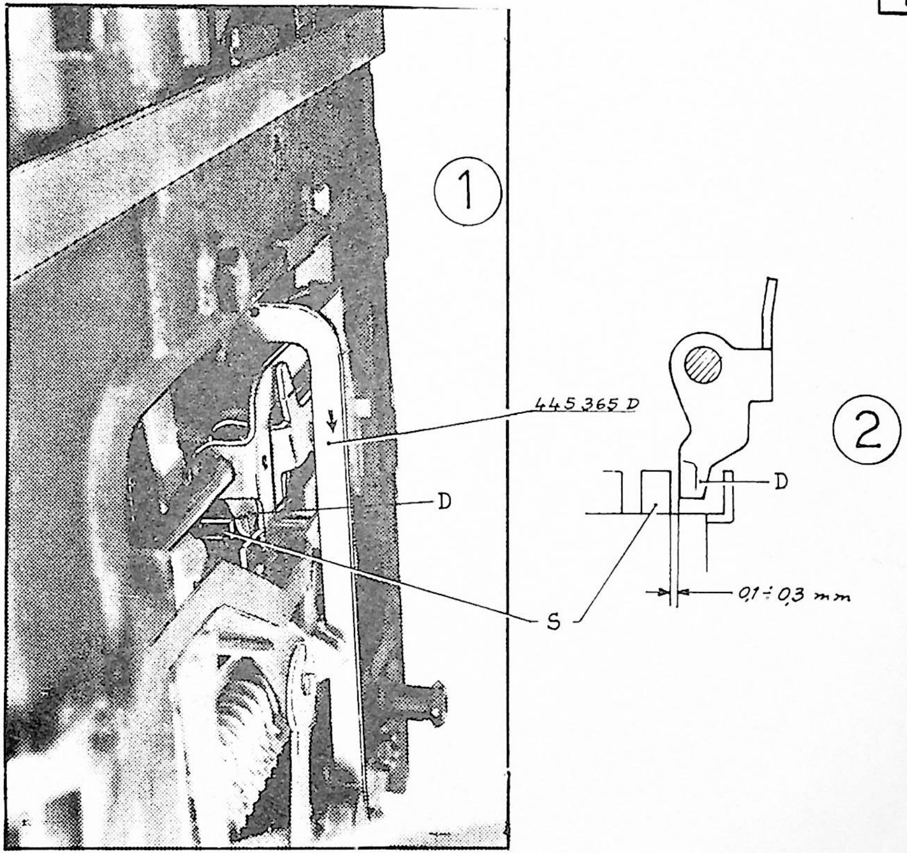
Clearance L between wing A and comb is as required (fig. 3)

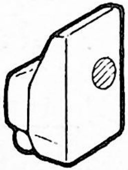
Loosen crank 445435L (fig. 3)



③

MULTIPLICATION ESCAPEMENT COMMAND (QUANTITY) ADJUSTMENT





Cord unplugged

The machine cycles continually with the [=] key down

- yes → Turn machine on back (keyboard up). Rotate main shaft until stay 445365D (fig. 1) is in its maximum downward position
- no → Enter 90 x 1 and depress the [=] key → Turn machine on back (keyboard up). Rotate main shaft until stay 445365D (fig. 1) is in its maximum downward position

In this condition the loose dog D (fig. 2) is disengaged from stop S with a clearance of 0.1 to 0.3 mm

- yes → FFG
- no → Rotate the main shaft a little more to position the cam as shown in fig. 4

Push down plunger 445435L (fig. 3) in manner to return the [=] key to rest

Plug cord in. (Allow machine to complete the operation)

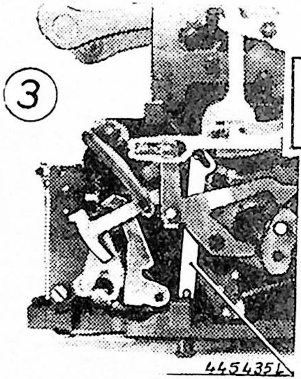
Unplug cord

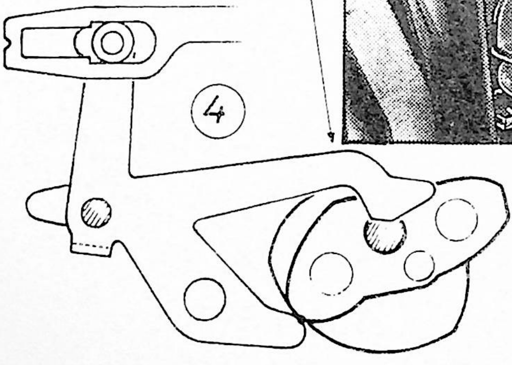
Act on wing A (fig. 5) forming it upward toward keyboard

- Enter 1
- Depress the [=] key

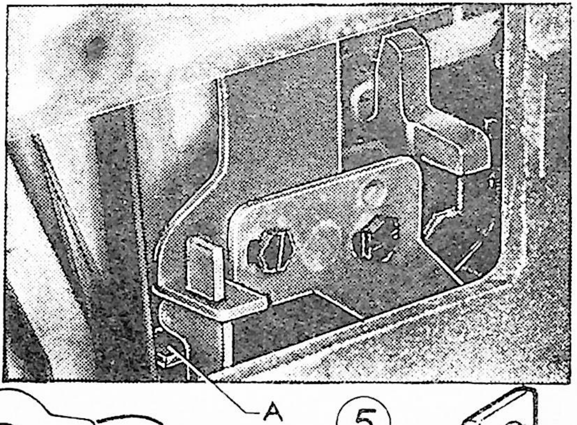
→ Turn machine on back (keyboard up). Rotate main shaft until stay 445365D (fig. 1) is in its maximum downward position

③

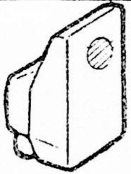




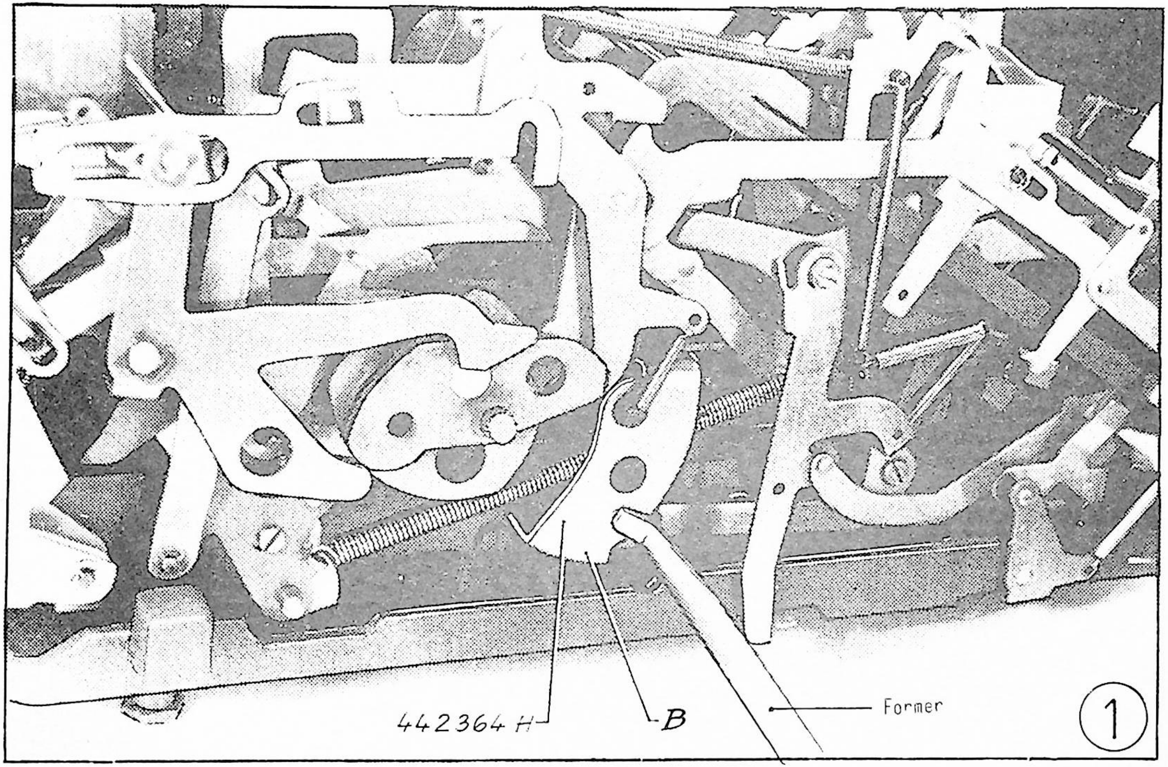
④

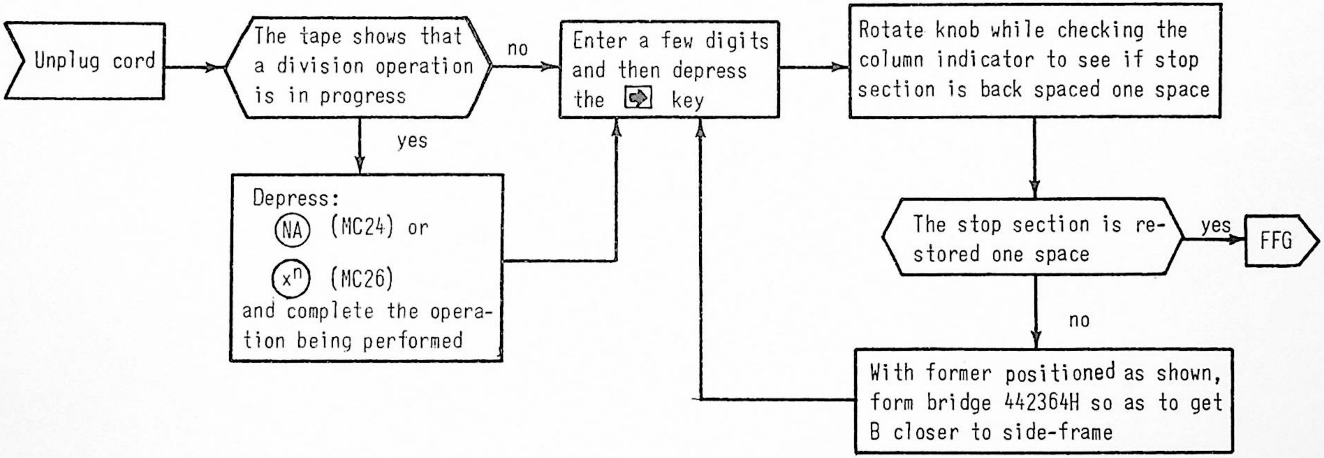


⑤

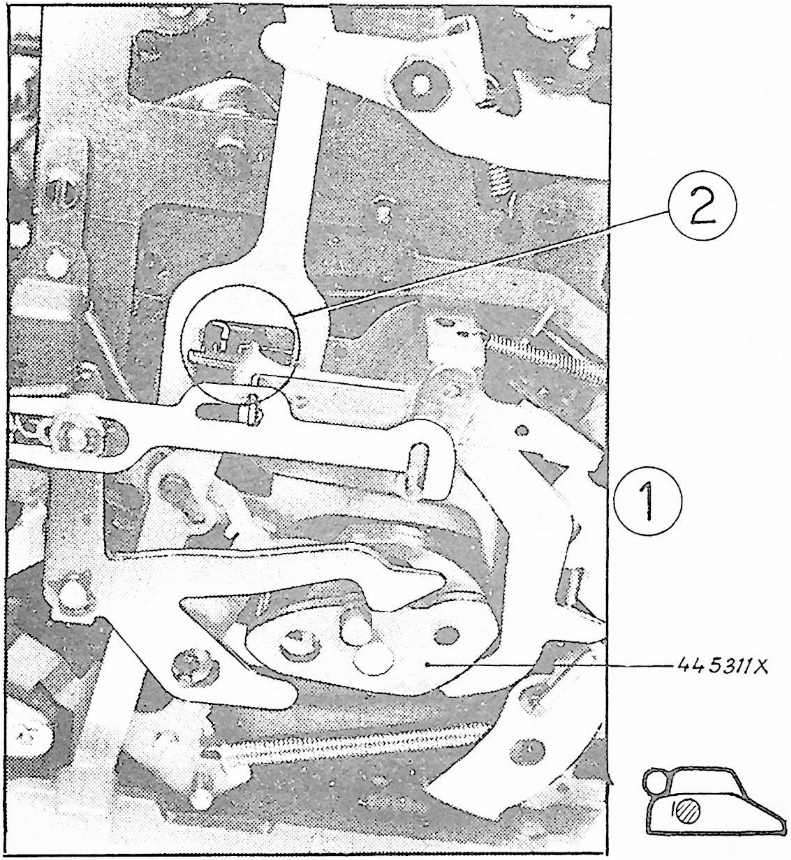


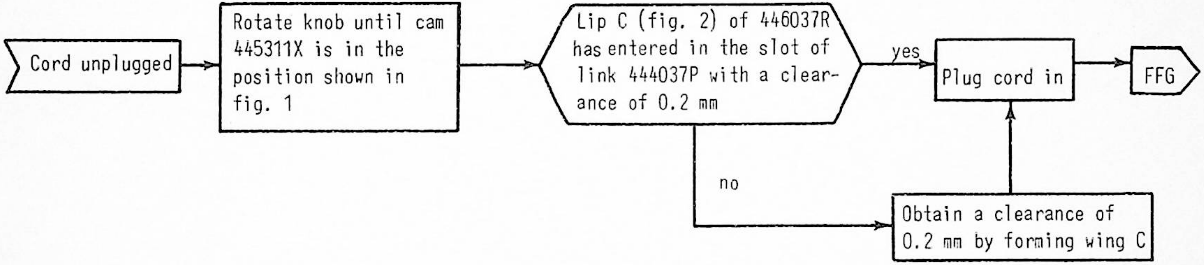
DIVISION BACKSPACE (ONE STEP) ADJUSTMENT




Unplug cord
The tape shows that a division operation is in progress
no
yes
Enter a few digits and then depress the ⇨ key
Depress: NA (MC24) or x^n (MC26) and complete the operation being performed
Rotate knob while checking the column indicator to see if stop section is back spaced one space
The stop section is restored one space
yes
FFG
no
With former positioned as shown, form bridge 442364H so as to get B closer to side-frame

ADJUSTMENT OF BRIDGE 446037R IN RESPECT TO SLIDER 444037P (IN DIVISION)





Cord unplugged

Rotate knob until cam 445311X is in the position shown in fig. 1

Lip C (fig. 2) of 446037R has entered in the slot of link 444037P with a clearance of 0.2 mm

yes

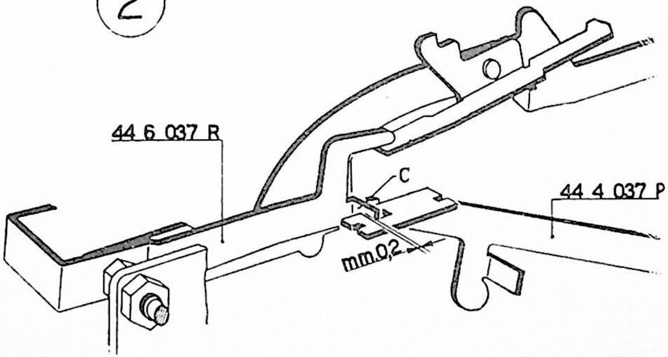
Plug cord in

FFG

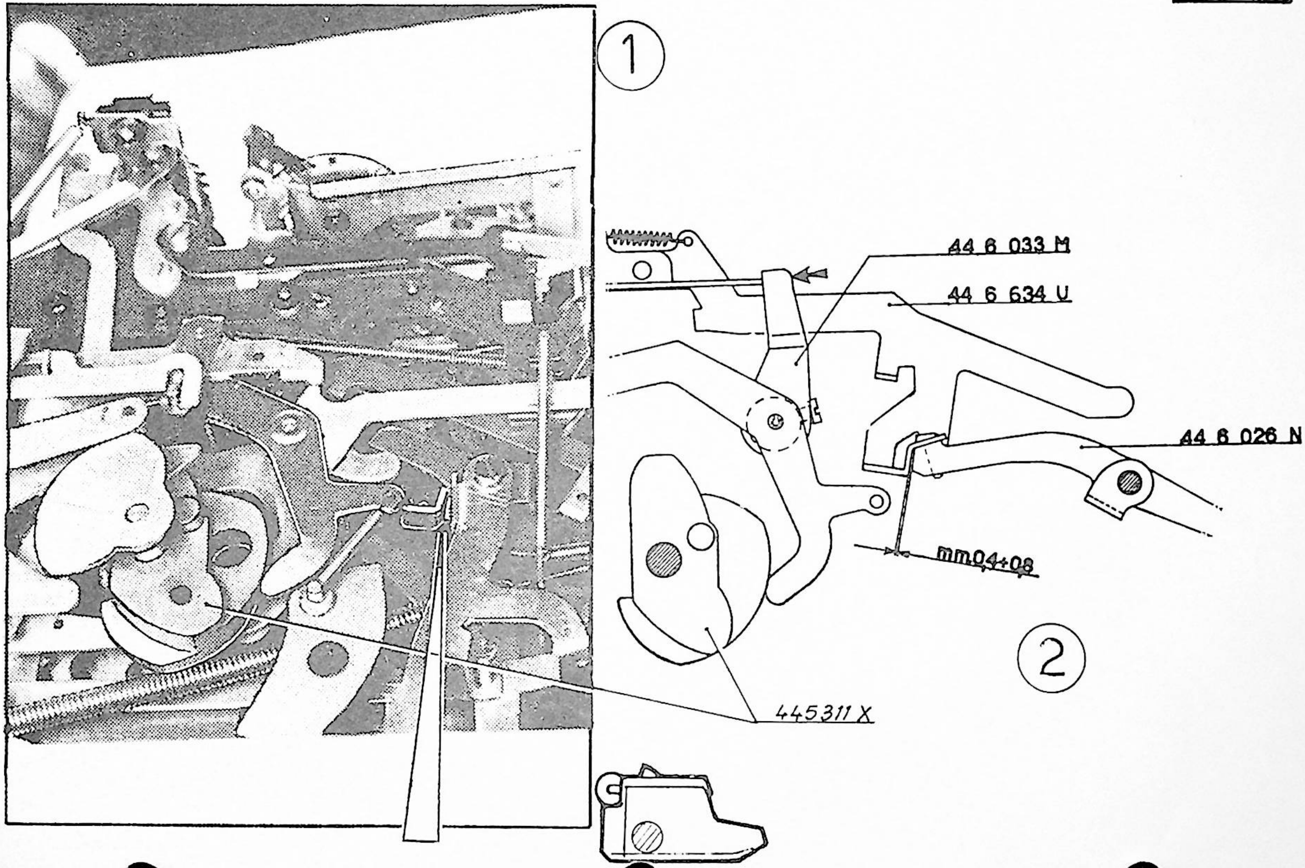
no

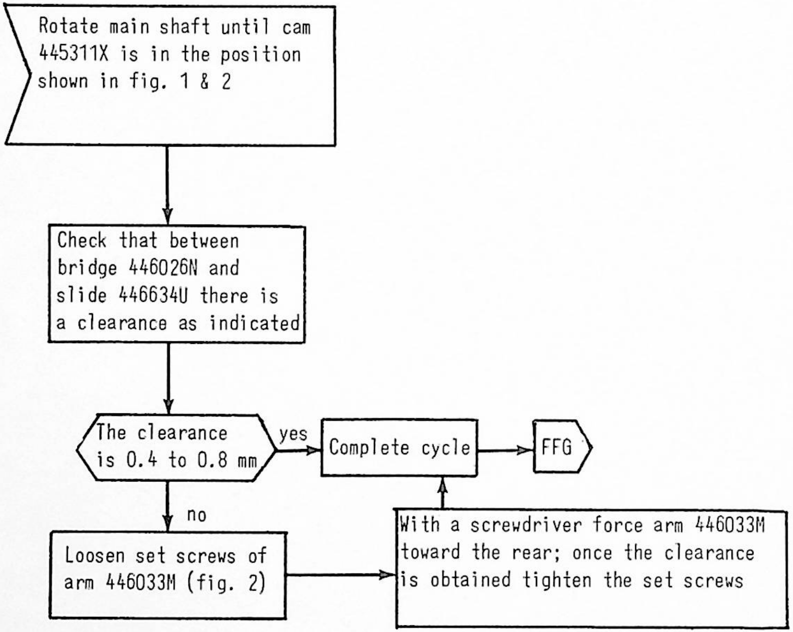
Obtain a clearance of 0.2 mm by forming wing C

②

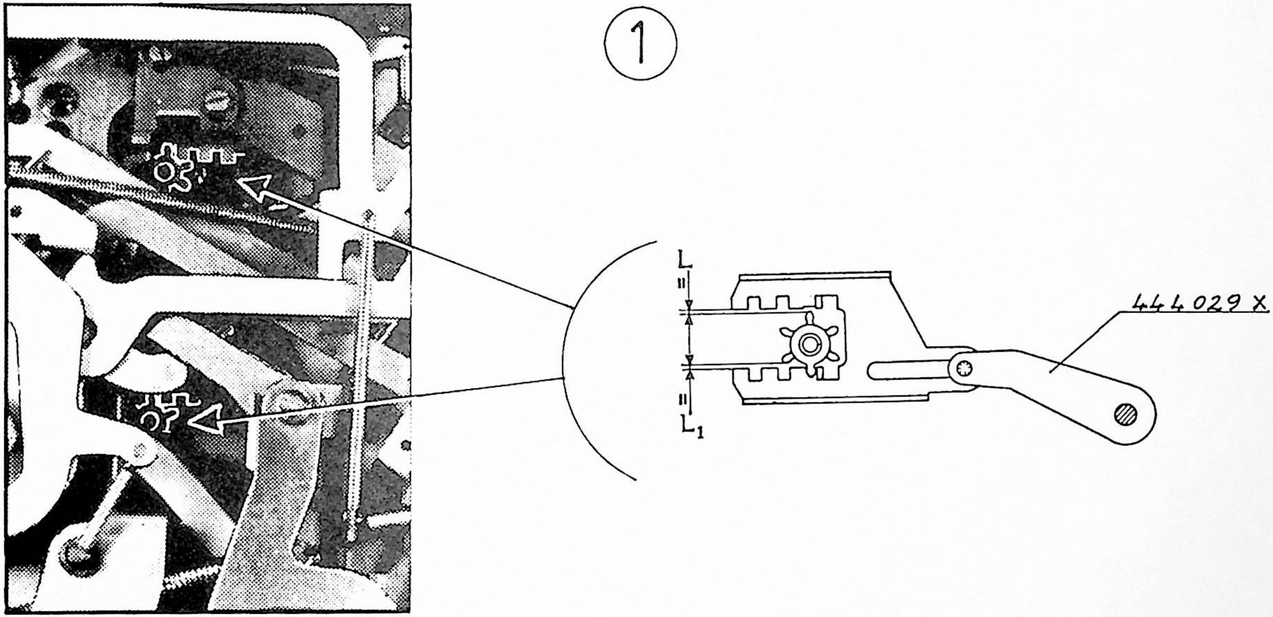


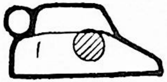
DIVISION STOP ADJUSTMENT - ARM 446033M

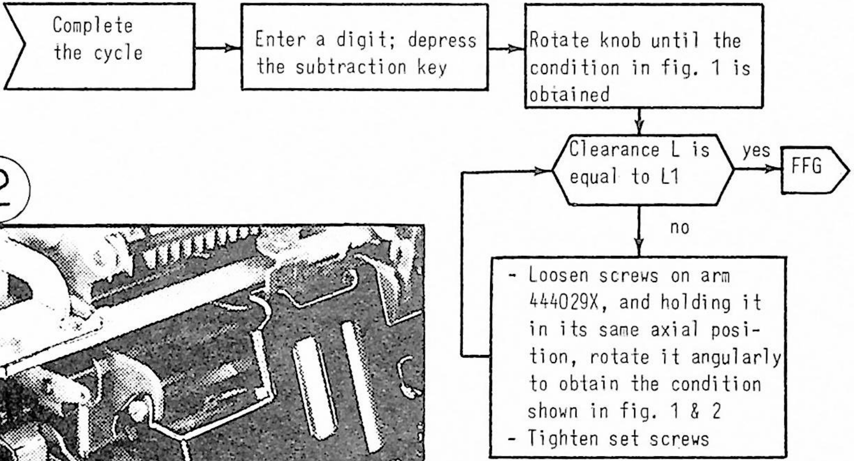



Rotate main shaft until cam 445311X is in the position shown in fig. 1 & 2
Check that between bridge 446026N and slide 446634U there is a clearance as indicated
The clearance is 0.4 to 0.8 mm
yes
Complete cycle
FFG
no
Loosen set screws of arm 446033M (fig. 2)
With a screwdriver force arm 446033M toward the rear; once the clearance is obtained tighten the set screws

REGISTER INVERSION PLATES MESH ADJUSTMENT (CALCULATION)







Complete the cycle

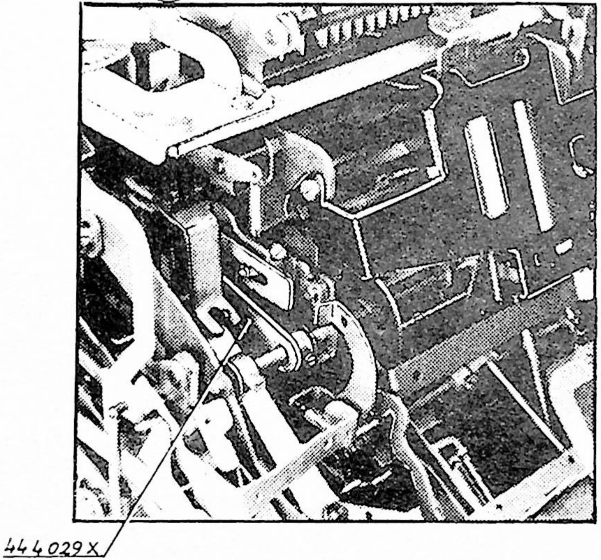
Enter a digit; depress the subtraction key

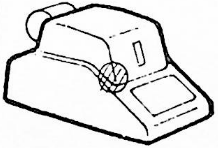
Rotate knob until the condition in fig. 1 is obtained

Clearance L is equal to L1

- Loosen screws on arm 444029X, and holding it in its same axial position, rotate it angularly to obtain the condition shown in fig. 1 & 2
- Tighten set screws

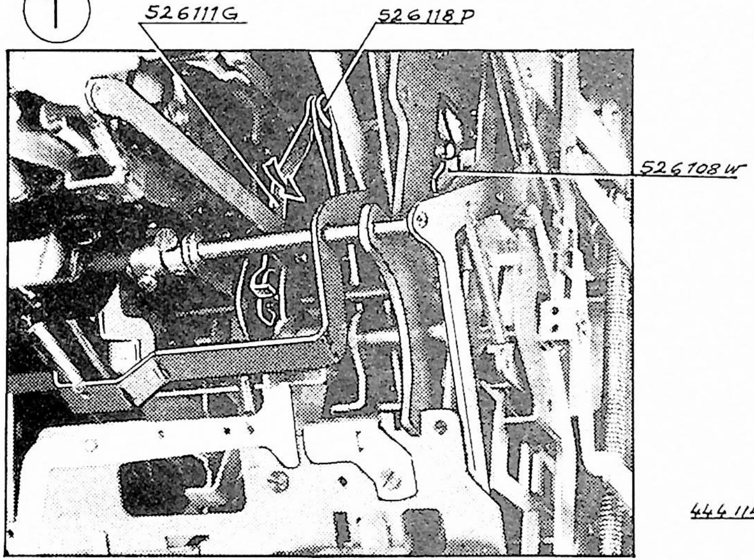
②

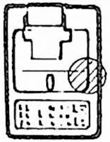




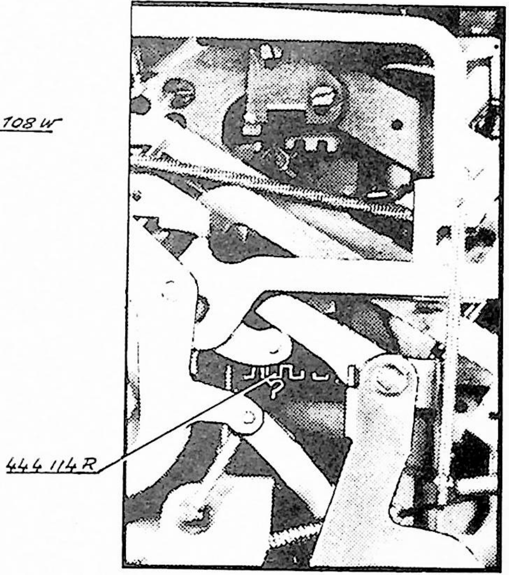
MC24 - REGISTER INVERSION PLATE MESH ADJUSTMENT (TOTAL)

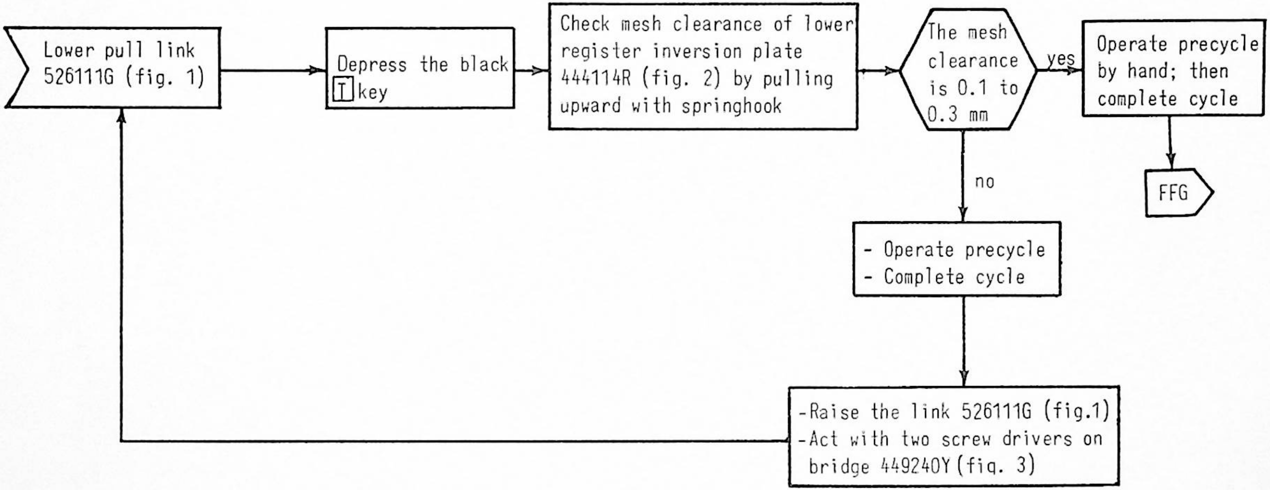
①





②





Lower pull link 526111G (fig. 1)

Depress the black T key

Check mesh clearance of lower register inversion plate 444114R (fig. 2) by pulling upward with springhook

The mesh clearance is 0.1 to 0.3 mm

yes

Operate precycle by hand; then complete cycle

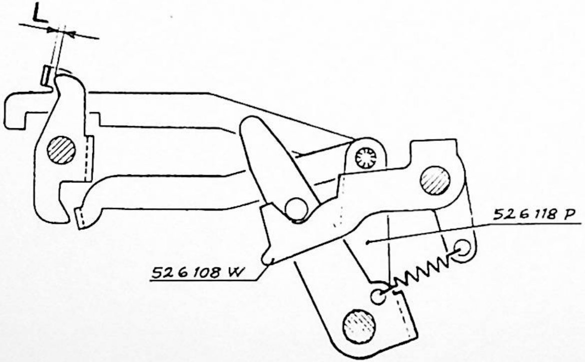
FFG

no

- Operate precycle
- Complete cycle

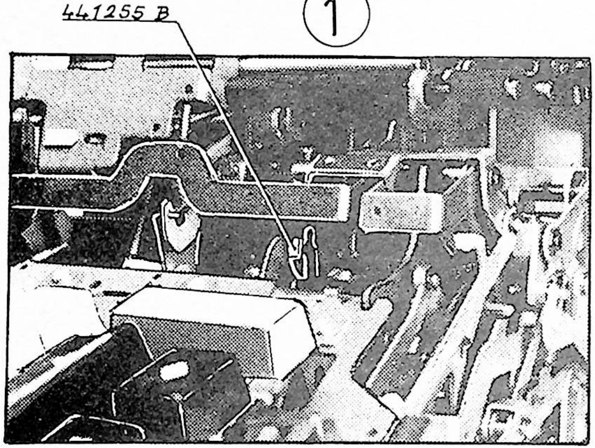
-Raise the link 526111G (fig.1)
-Act with two screw drivers on bridge 449240Y (fiq. 3)

③

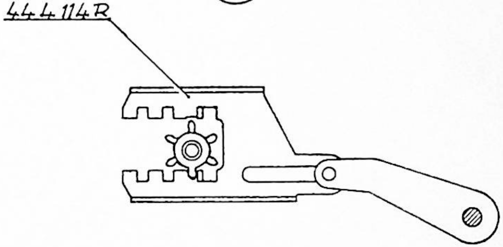


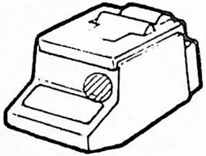
MC26 - REGISTER INVERSION PLATE MESH ADJUSTMENT (TOTAL)

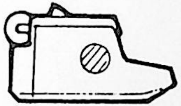
①



②







Lower pull link 441255B (fig. 1 to 4)

Depress the [T] key

Check mesh clearance of inversion plate 444114R for both registers by pulling them upward with springhook

The mesh clearance is 0.1 to 0.3 mm

yes

no

- Operate precycle by hand
- Complete cycle

- Raise the link 441255B
- Act with two screw drivers on bridge 449240Y (fig. 3)

- Operate precycle by hand
- Complete the cycle

This check has required an adjustment

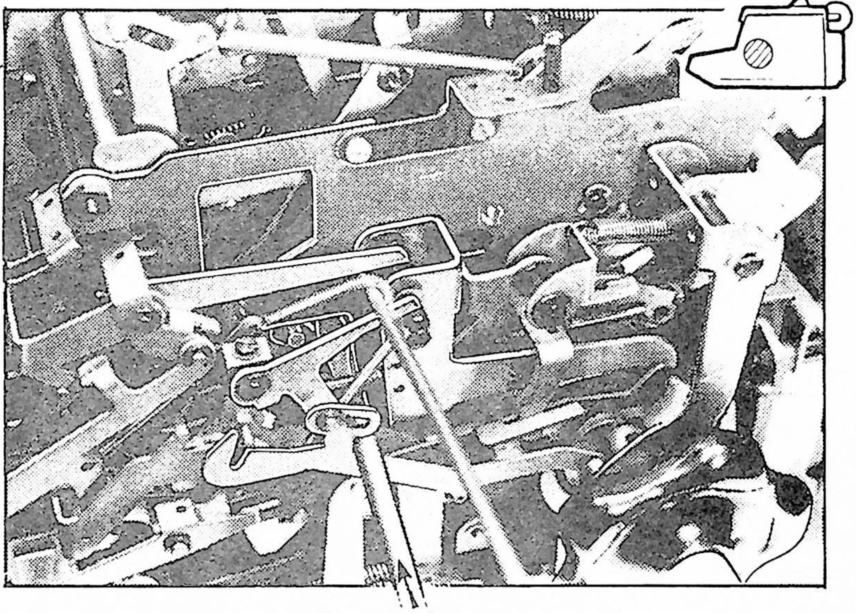
yes

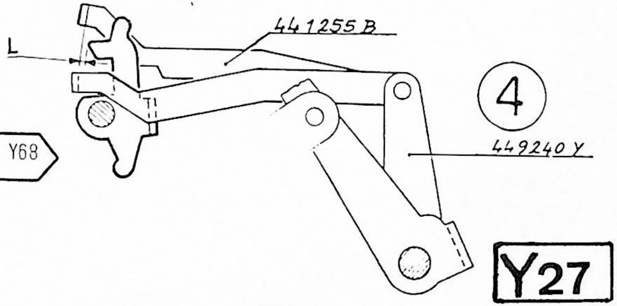
Y68

no

FFG

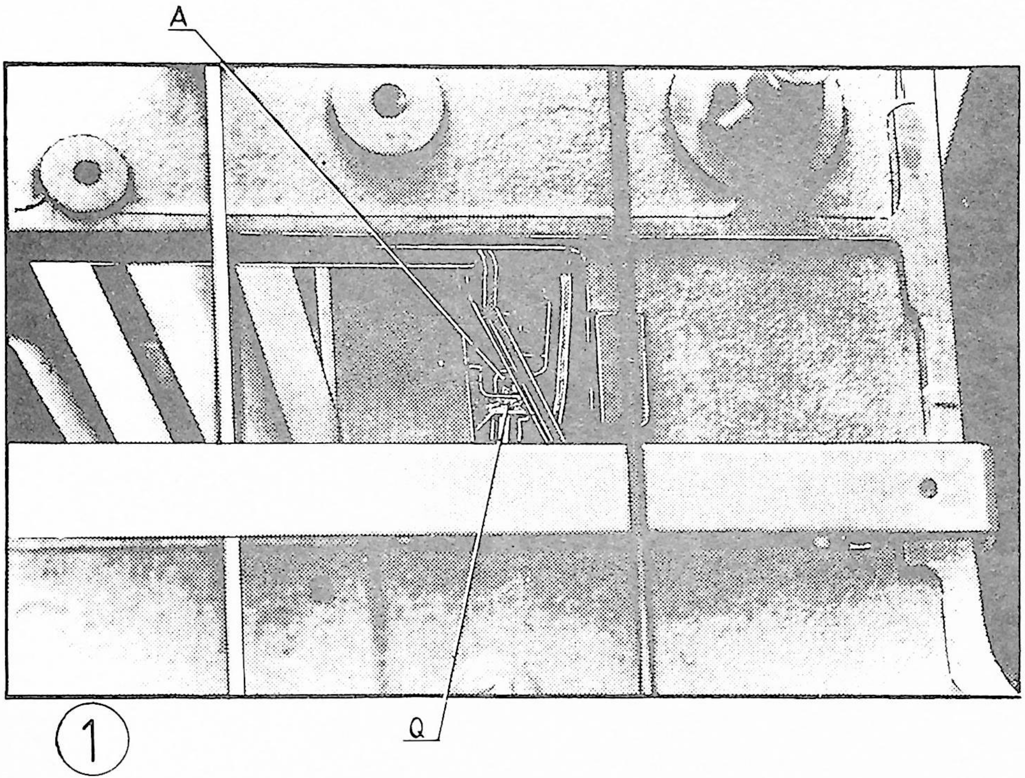
③

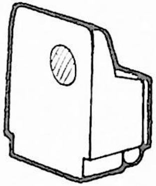


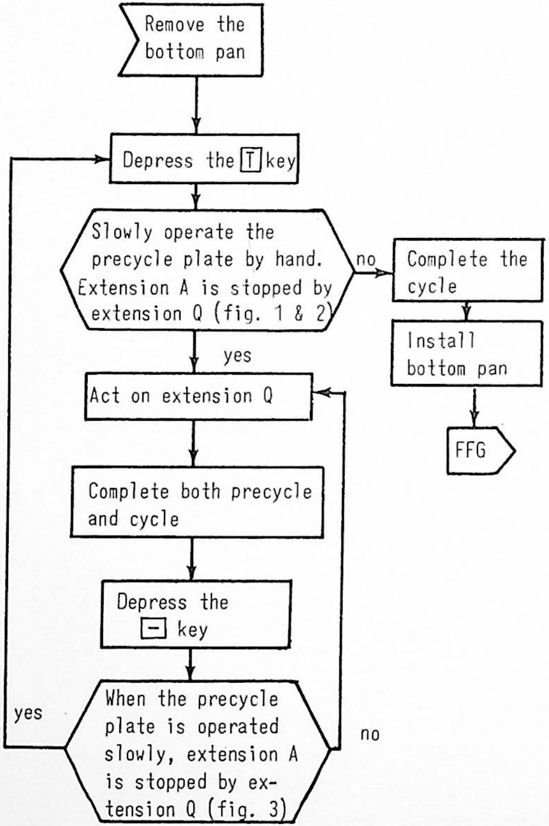


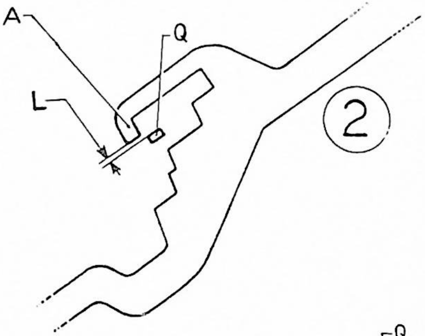
④

MC26 - POSITION OF CRANK 449337P ADJUSTMENT

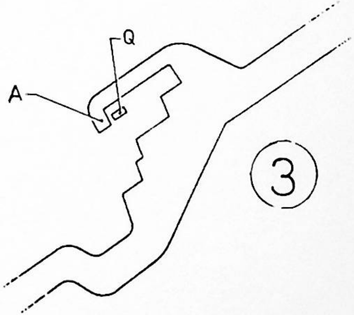





Remove the bottom pan
Depress the T key
Slowly operate the precycle plate by hand. Extension A is stopped by extension Q (fig. 1 & 2)
no
Complete the cycle
Install bottom pan
FFG
yes
Act on extension Q
Complete both precycle and cycle
Depress the − key
When the precycle plate is operated slowly, extension A is stopped by extension Q (fig. 3)
yes
no

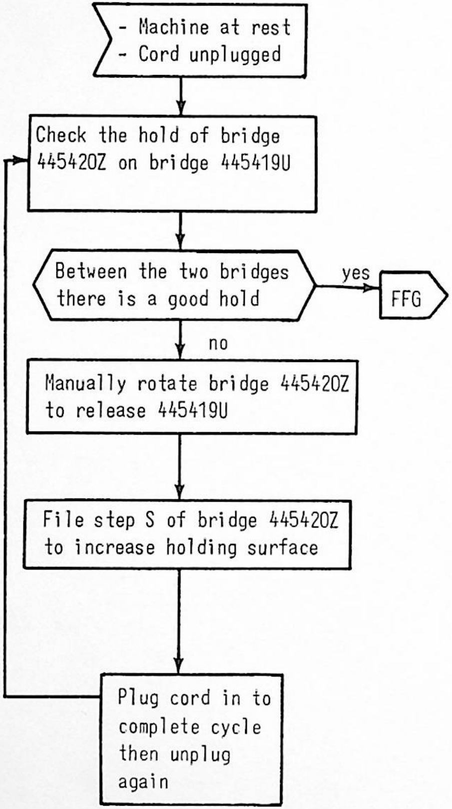

A
Q
L

②


Q
A

③

HOLD OF BRIDGE 445420Z ON BRIDGE 445419U ADJUSTMENT



- Machine at rest
- Cord unplugged

Check the hold of bridge 445420Z on bridge 445419U

Between the two bridges there is a good hold

yes

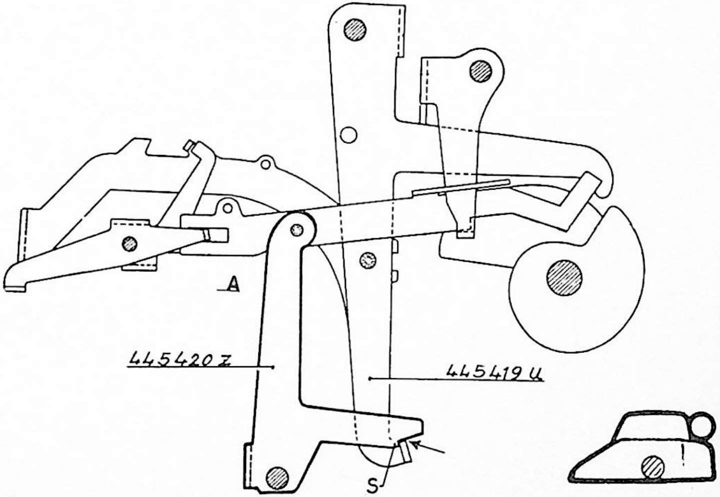
FFG

no

Manually rotate bridge 445420Z to release 445419U

File step S of bridge 445420Z to increase holding surface

Plug cord in to complete cycle then unplug again



CRANK 440021X ADJUSTMENT

Enter a digit

Make sure the remainder is positive (if necessary move anchor 440019D (fig. 2))

Depress the [−] key

Rotate main shaft about 90°

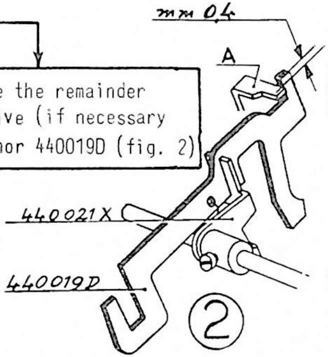
Check hold of extension A on anchor 440019D (fig. 1)

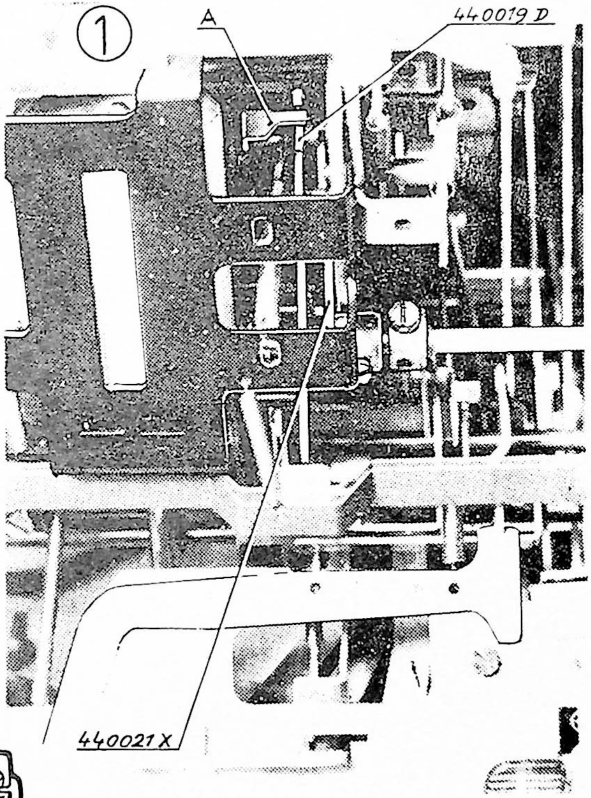
L = 0.4 mm (fig. 2)

no → Adjust angular position of crank 440021X to obtain the required clearance

yes → Complete cycle

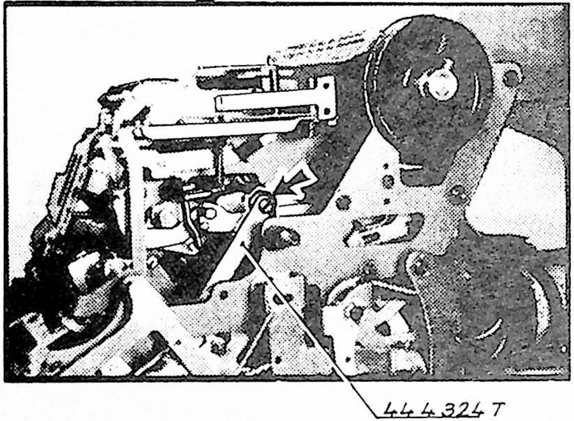
Complete cycle → FFG





MC26 - CRANK 521051J ADJUSTMENT

①



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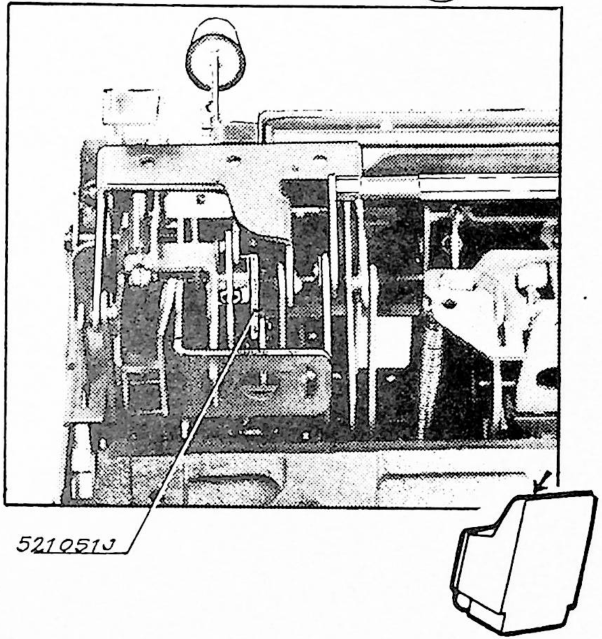


The ☒ key is down

no → FFG

yes →

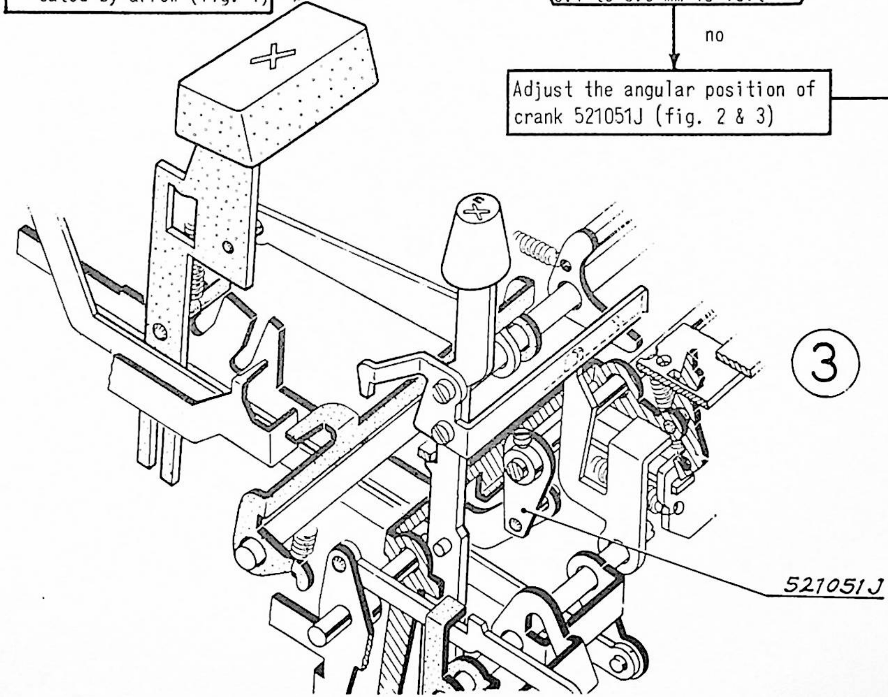
- Cord unplugged
- Push the slider 444324T toward the front at point indicated by arrow (fig. 1)

→ Rotate main shaft about 90°. (If necessary operate precycle)

→ In these conditions, pushing with force, at the point and in the direction indicated by the arrow (fig. 1) a movement of 0.1 to 0.3 mm is felt

yes → Plug cord in → FFG

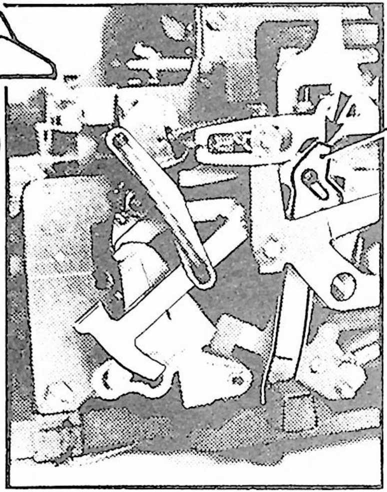
no → Adjust the angular position of crank 521051J (fig. 2 & 3) → Plug cord in

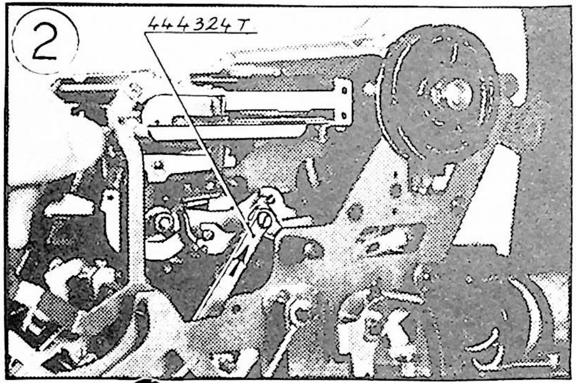


③

CRANK 449504E ADJUSTMENT

①





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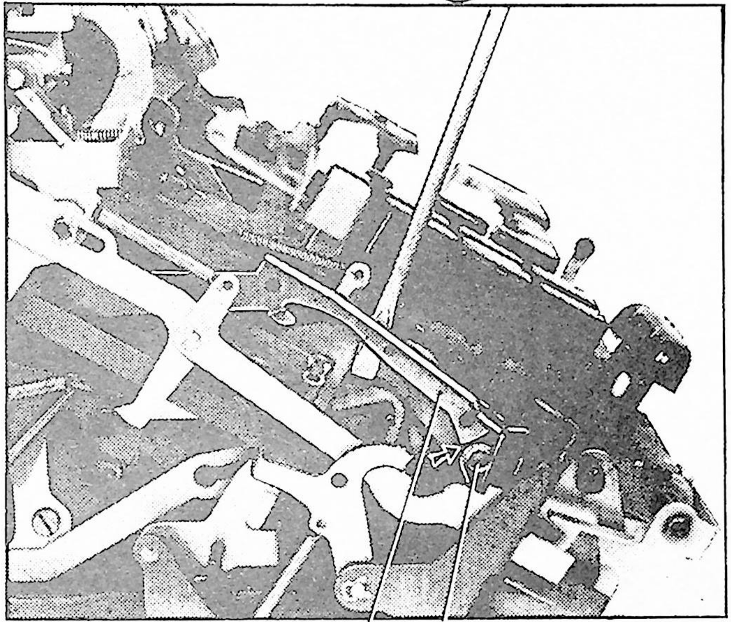


Cord plugged in

Push down on plunger 445435L (fig. 1) to return key to rest

Push in the direction shown by the arrow (fig. 2) slider 444324T

Unplug cord

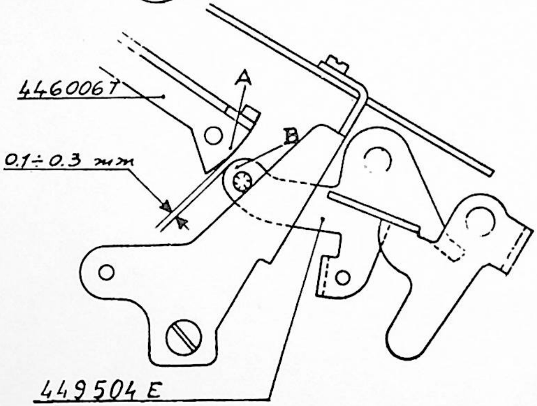
Screws of crank 449504E (fig. 3-4) are loose

no → FFG

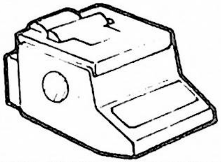
yes ↓

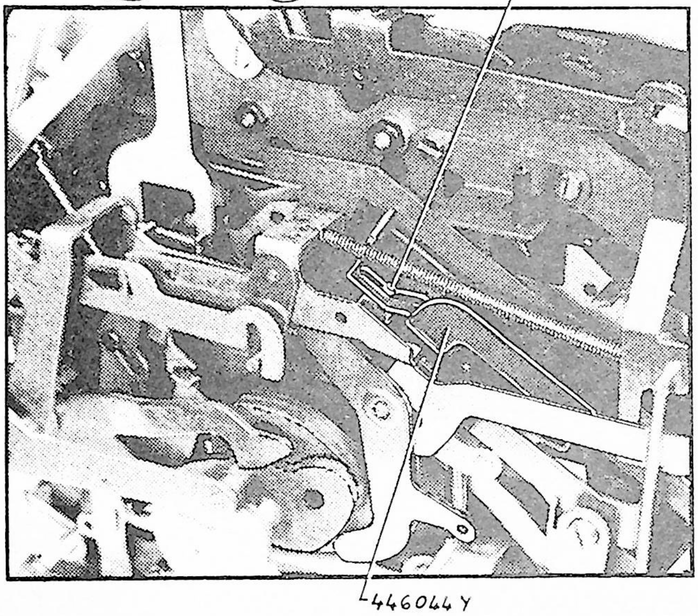
Rotate crank 449504E so that the clearance shown in fig. 4 is present between surfaces A and B. Secure the crank 449504E in this position (to make verification of this condition easy flex the arm 446006T outward slightly as in fig. 3) → FFG

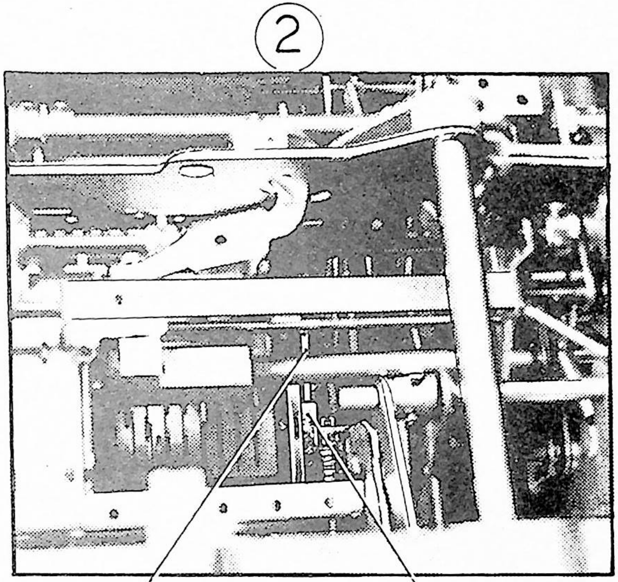
④

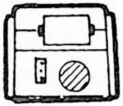


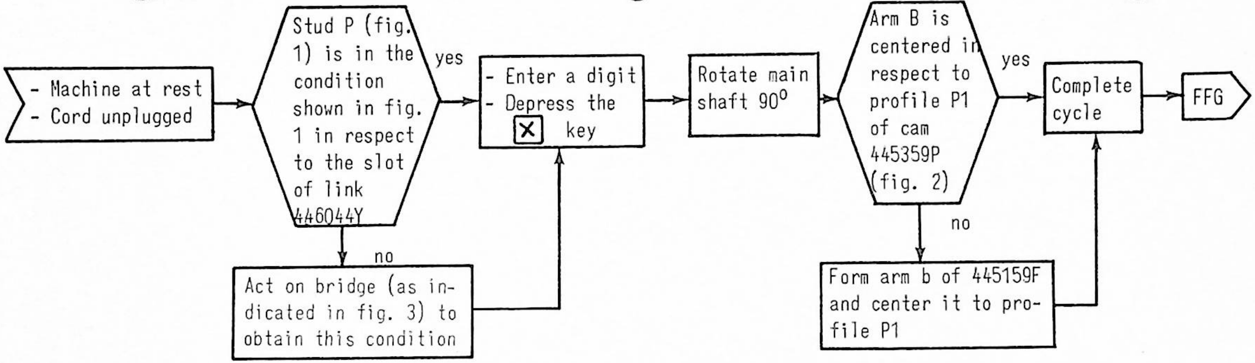
MEMORY CLEAR CONTROL ARM AXIAL ADJUSTMENT

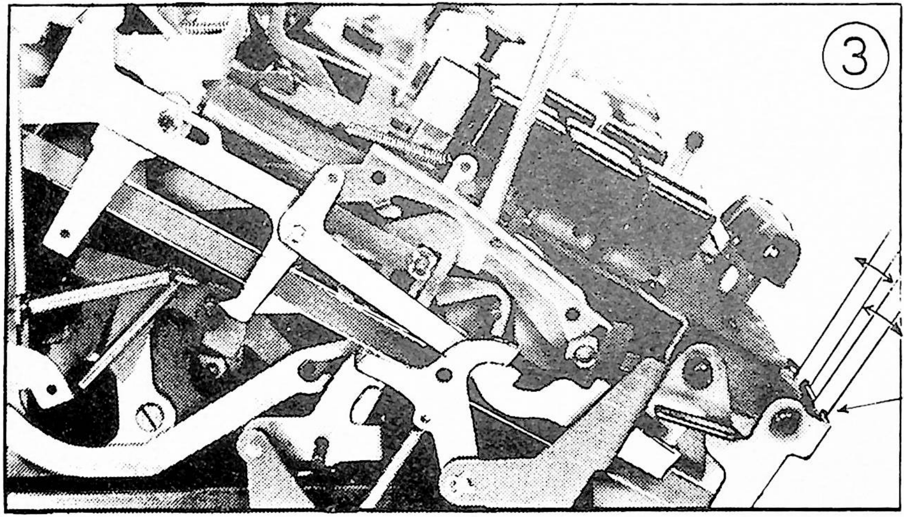






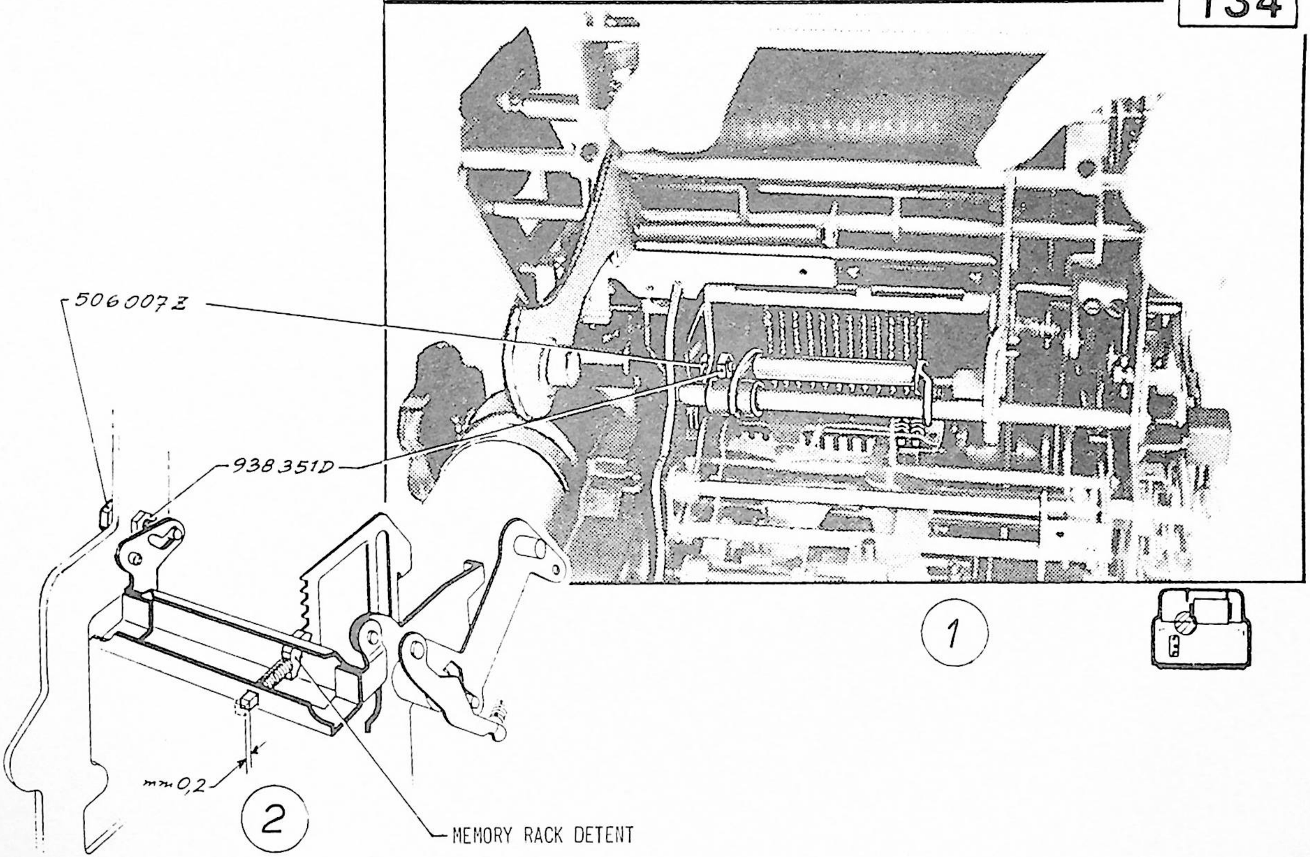


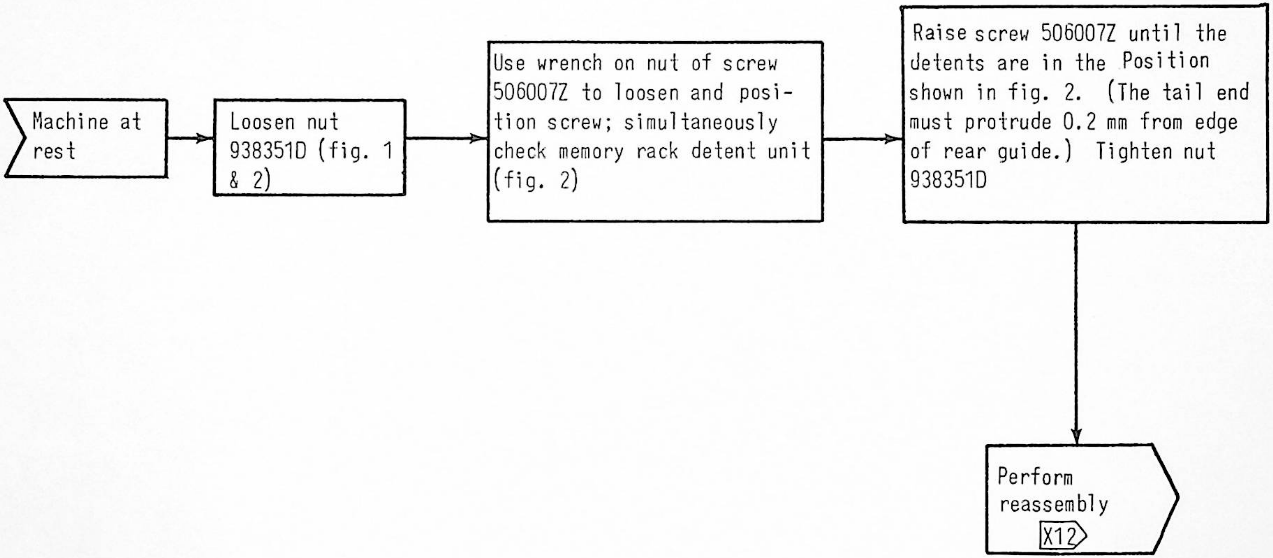

- Machine at rest
- Cord unplugged
Stud P (fig. 1) is in the condition shown in fig. 1 in respect to the slot of link 446044Y
yes
no
Act on bridge (as indicated in fig. 3) to obtain this condition
- Enter a digit
- Depress the ☒ key
Rotate main shaft 90°
Arm B is centered in respect to profile P1 of cam 445359P (fig. 2)
yes
no
Form arm b of 445159F and center it to profile P1
Complete cycle
FFG



ACT ONLY ON LEFT SIDE OF BRIDGE

MEMORY RACK DETENT ENGAGEMENT ADJUSTMENT





Machine at rest

Loosen nut 938351D (fig. 1 & 2)

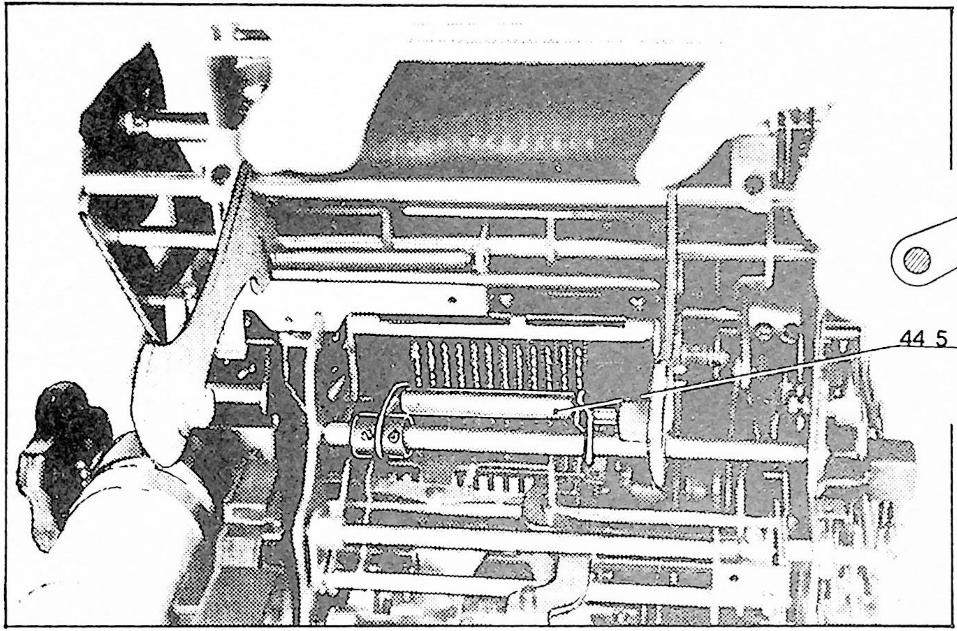
Use wrench on nut of screw 506007Z to loosen and position screw; simultaneously check memory rack detent unit (fig. 2)

Raise screw 506007Z until the detents are in the Position shown in fig. 2. (The tail end must protrude 0.2 mm from edge of rear guide.) Tighten nut 938351D

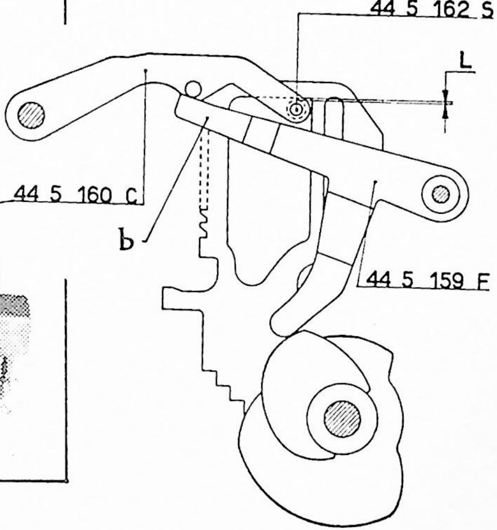
Perform reassembly X12

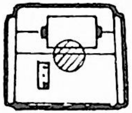
MC26 - MEMORY CLEAR CONTROL ARM (445159F) ADJUSTMENT

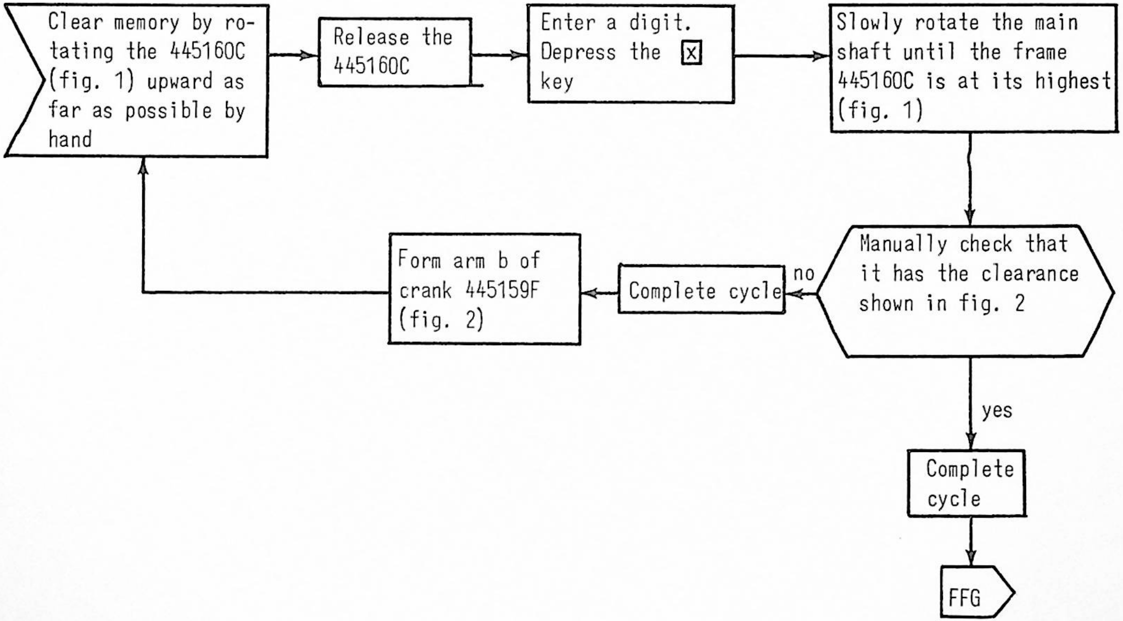
1



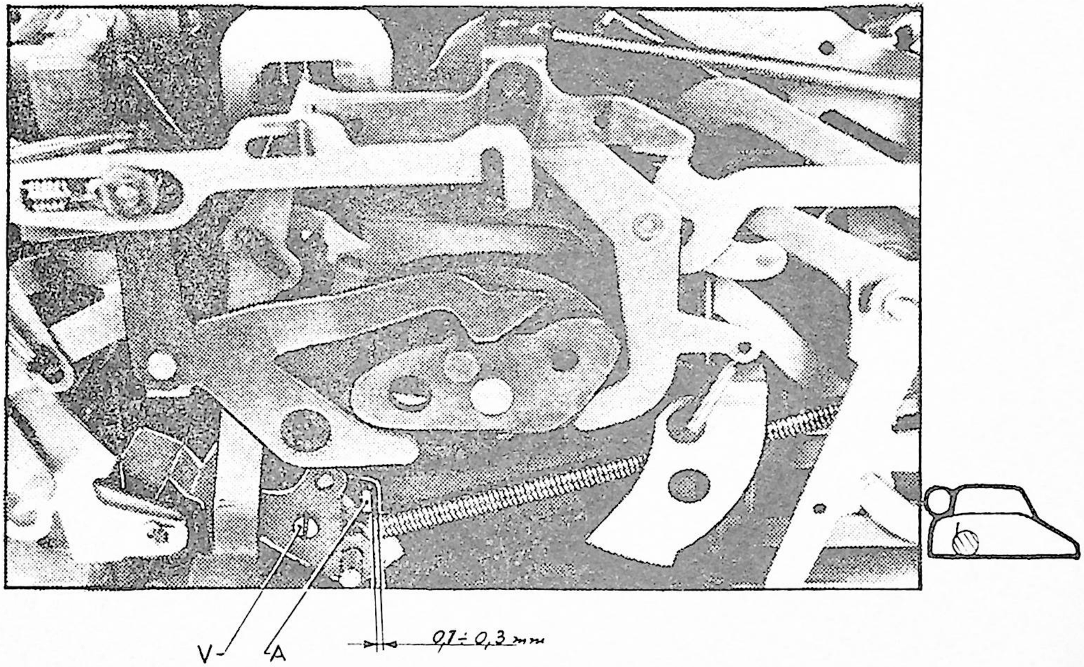
2

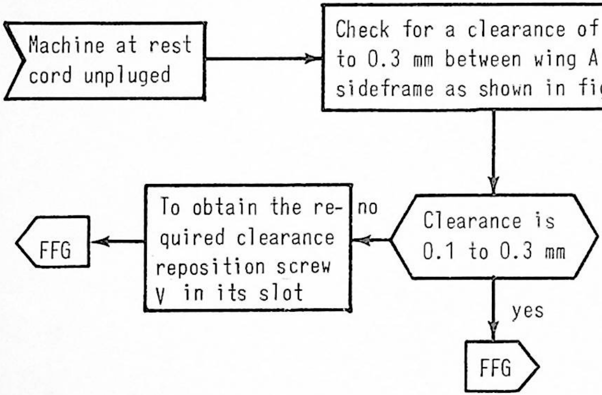





Clear memory by rotating the 445160C (fig. 1) upward as far as possible by hand
Release the 445160C
Enter a digit. Depress the ☒ key
Slowly rotate the main shaft until the frame 445160C is at its highest (fig. 1)
Manually check that it has the clearance shown in fig. 2
no
Complete cycle
Form arm b of crank 445159F (fig. 2)
yes
Complete cycle
FFG

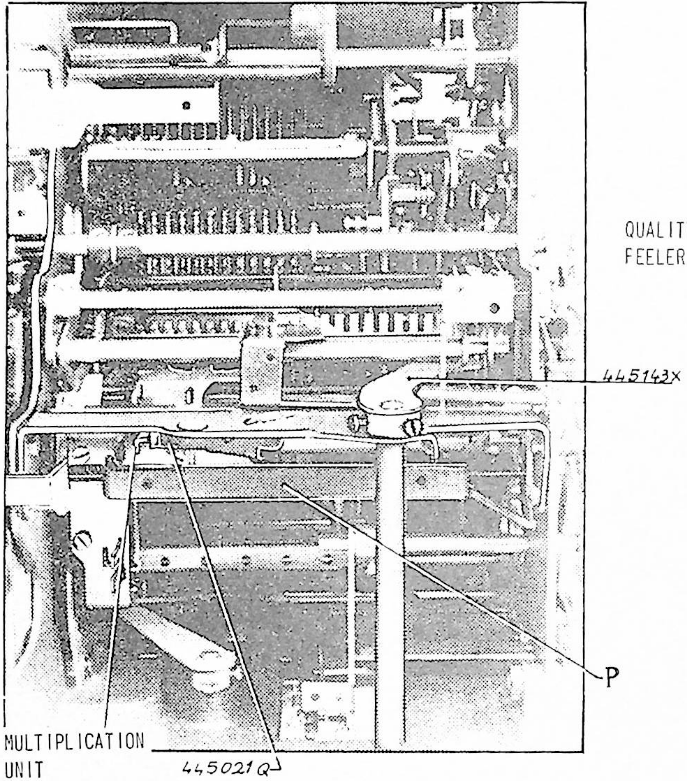
ENTRY CONTROL PLATE 445032K ADJUSTMENT




Machine at rest cord unpluged
Check for a clearance of 0.1 to 0.3 mm between wing A and sideframe as shown in figure
Clearance is 0.1 to 0.3 mm
no
To obtain the required clearance reposition screw V in its slot
FFG
yes
FFG

MULTIPLIER UNIT AXIAL ADJUSTMENT

①



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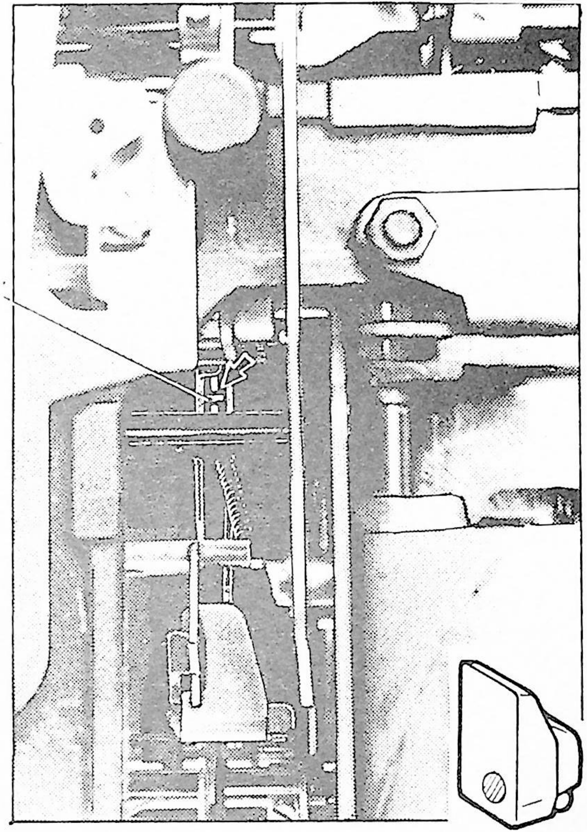


- Machine at rest

Latch the multiplier unit to latch 445021Q (fig. 1)

- Place a 9 in memory
- Enter a number

Comb 445418T is positioned so that its first notch is in front of the wing of plate 445323T

no

Position angularly the arm 445143X in order to obtain the required condition then tighten one of the screws friction tight (fig.3)

yes

Depress the $\boxed{=}$ key

Rotate main shaft 90°

Remove bottom pan

Move bridge P (fig. 1) and check that the quality feeler is centered in respect to the memory rack (fig. 2)

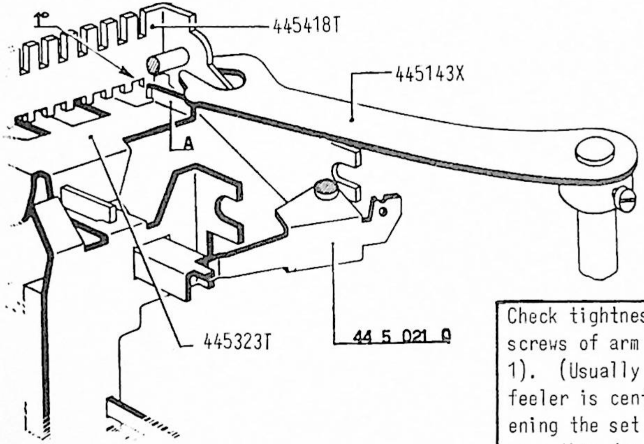
no

Check tightness of the set screws of arm 445143X (fig. 1). (Usually the quality feeler is centered by tightening the set screws; in case this does not do it, revise angular position of arm 445143X)

yes

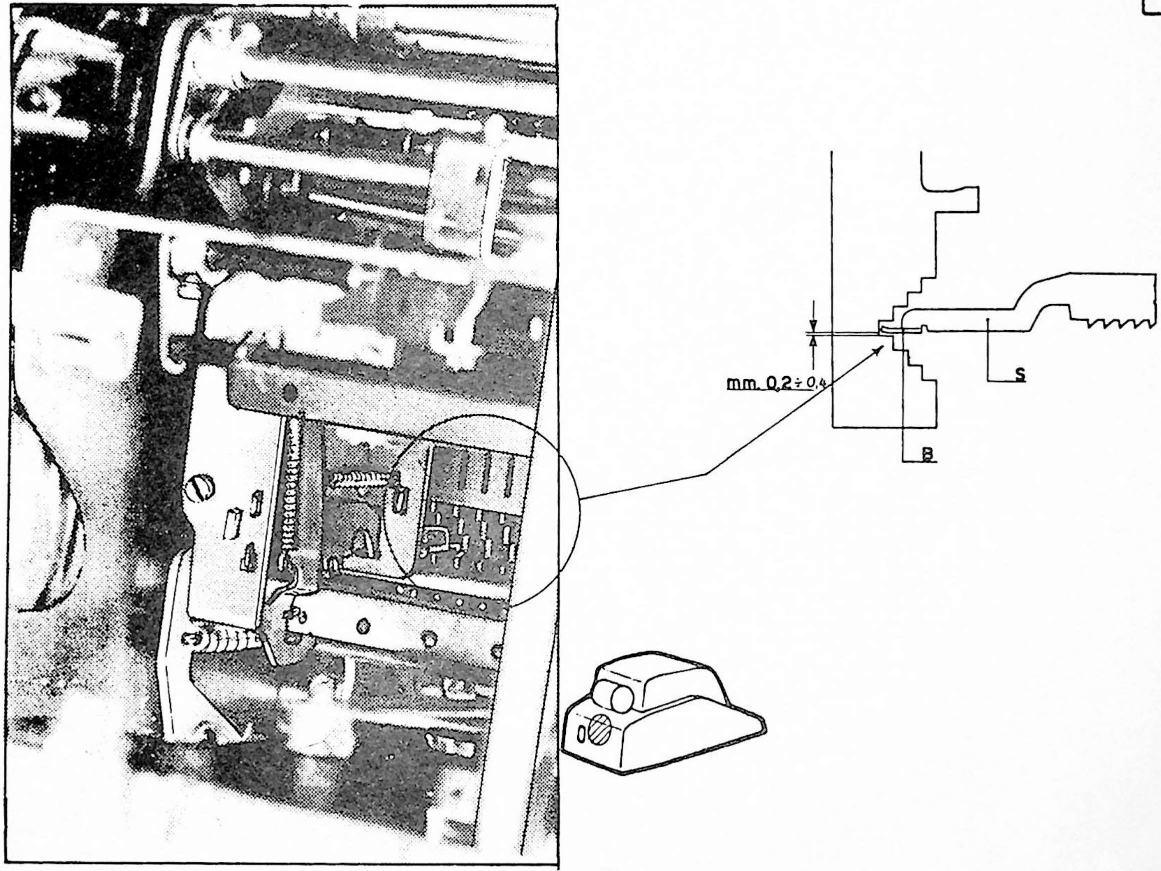
Plug cord in

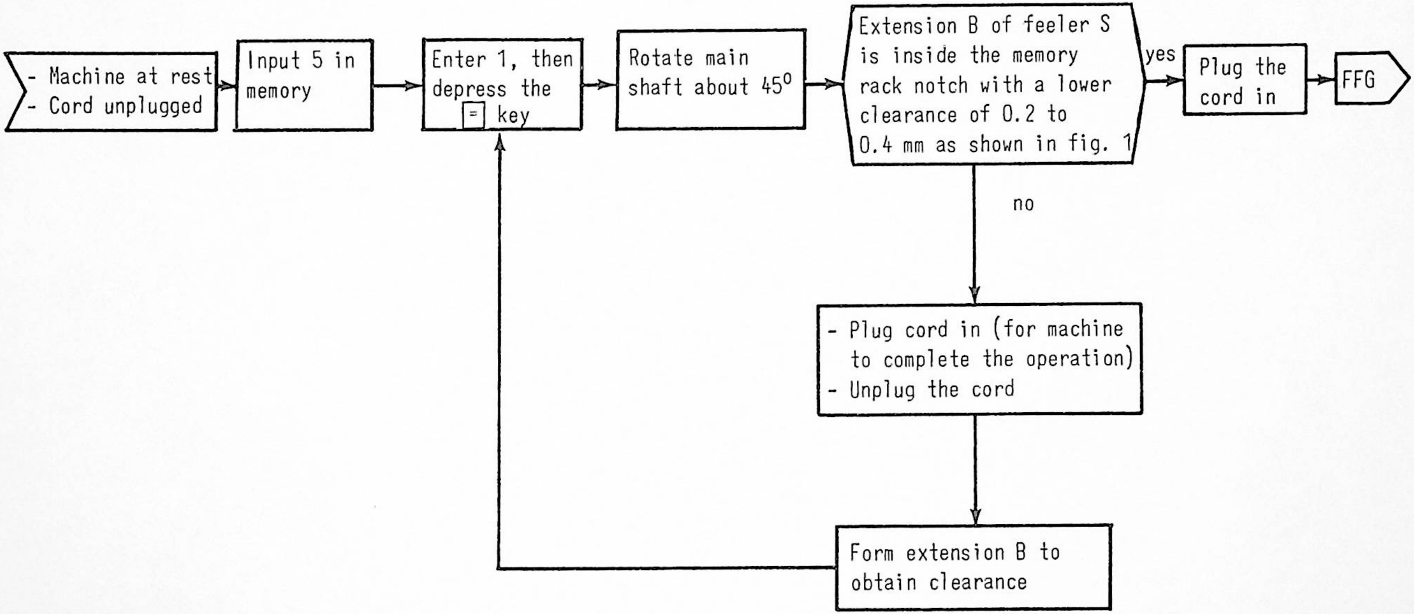
FFG



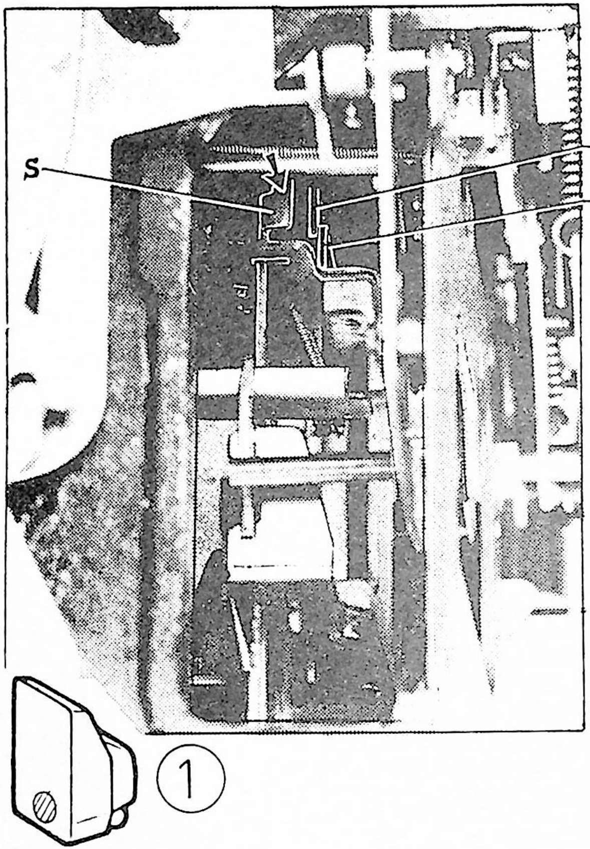
③

DISPLACEMENT OF THE QUANTITY FEELER 445325V ADJUSTMENT



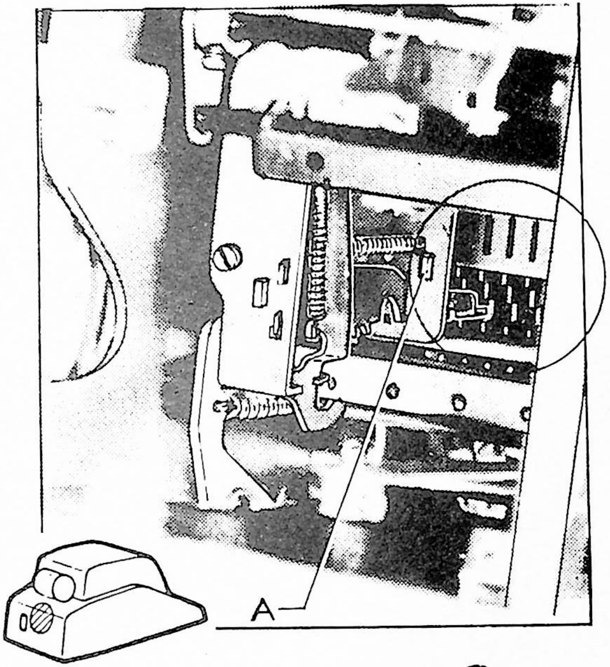

- Machine at rest
- Cord unplugged
Input 5 in memory
Enter 1, then depress the = key
Rotate main shaft about 45°
Extension B of feeler S is inside the memory rack notch with a lower clearance of 0.2 to 0.4 mm as shown in fig. 1
yes
Plug the cord in
FFG
no
- Plug cord in (for machine to complete the operation)
- Unplug the cord
Form extension B to obtain clearance

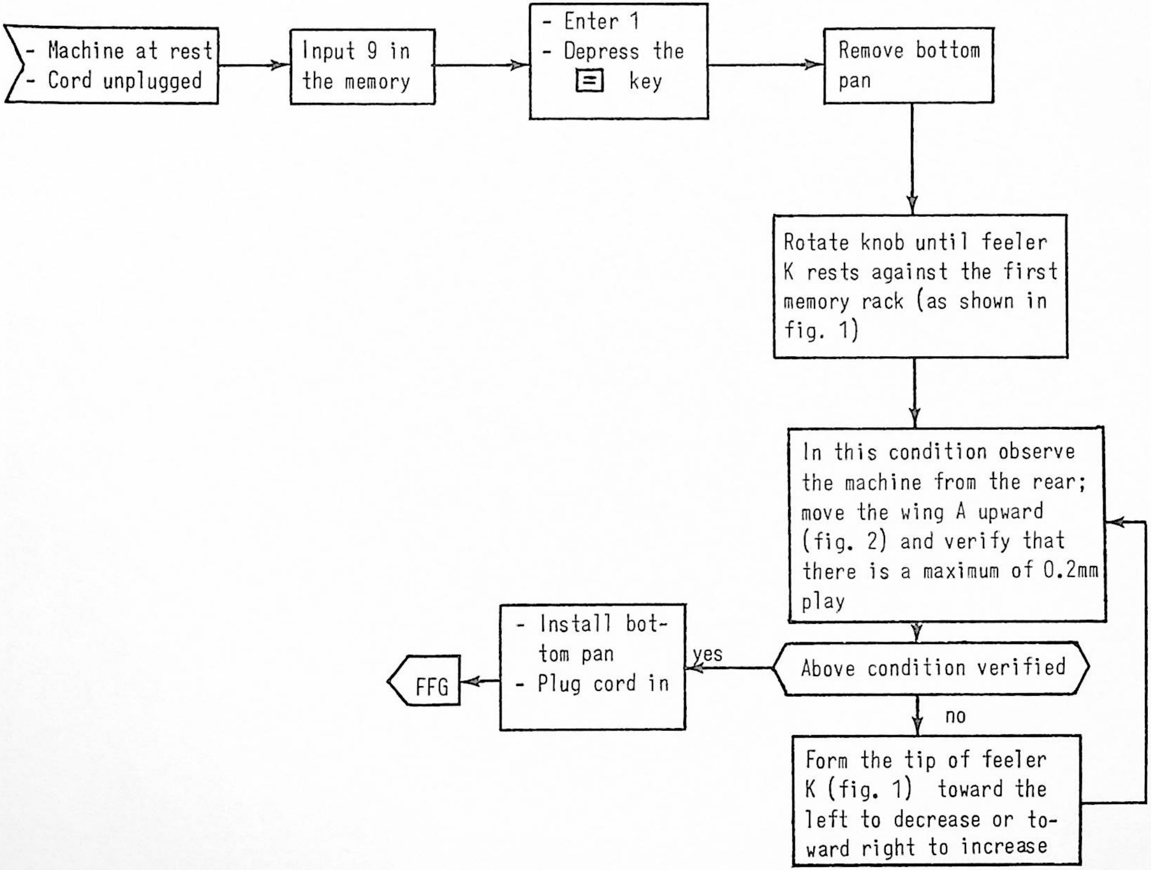
FEELER POSITION ADJUSTMENT



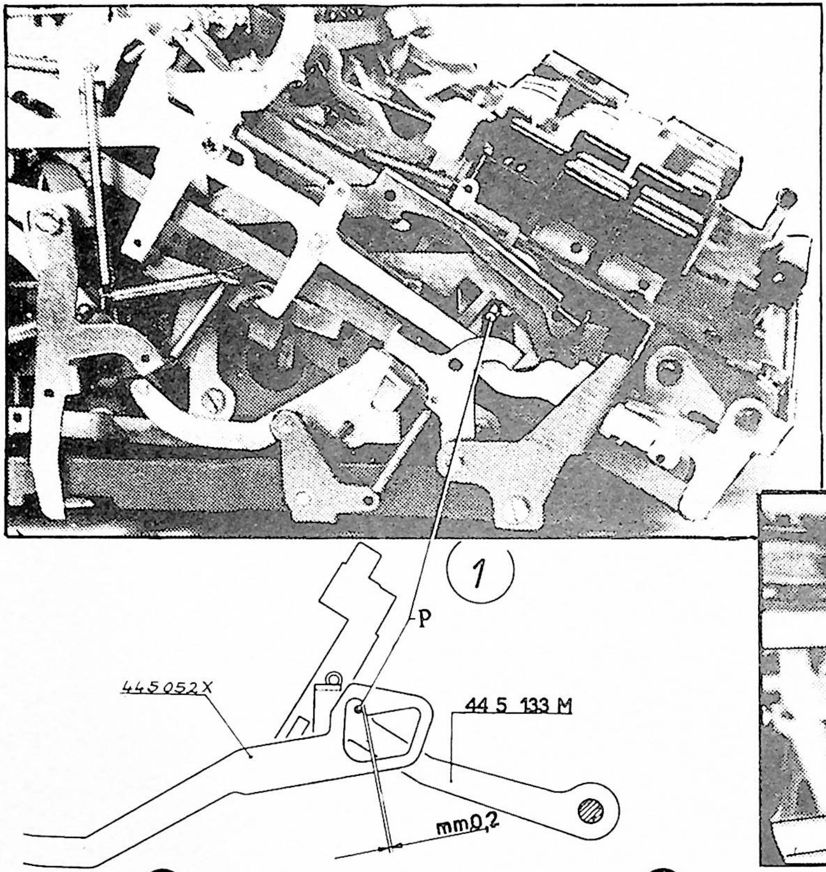
①

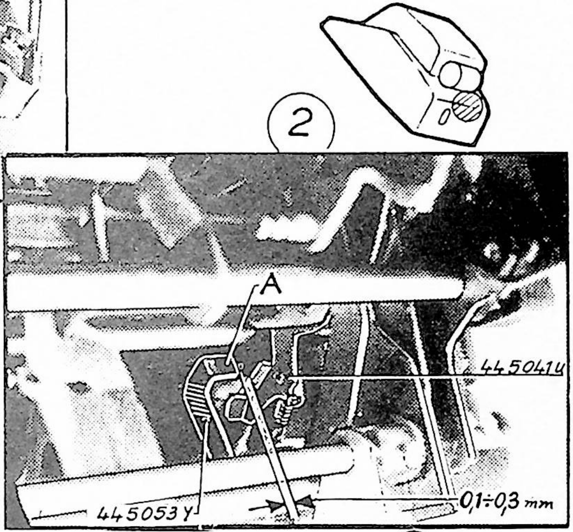
②




- Machine at rest
- Cord unplugged
Input 9 in the memory
- Enter 1
- Depress the = key
Remove bottom pan
Rotate knob until feeler K rests against the first memory rack (as shown in fig. 1)
In this condition observe the machine from the rear; move the wing A upward (fig. 2) and verify that there is a maximum of 0.2mm play
Above condition verified
yes
no
- Install bottom pan
- Plug cord in
FFG
Form the tip of feeler K (fig. 1) toward the left to decrease or toward right to increase

ANGULAR POSITION OF CRANK 445048B ADJUSTMENT





- Machine at rest
- Cord plugged in

Depress the [T] key twice.
Depress the [×] key

Unplug cord

Enter 1.
Depress the [=] key

Rotate knob 90°

The clearance between stud P and link 445052X is 0.2 mm max. (fig. 1)

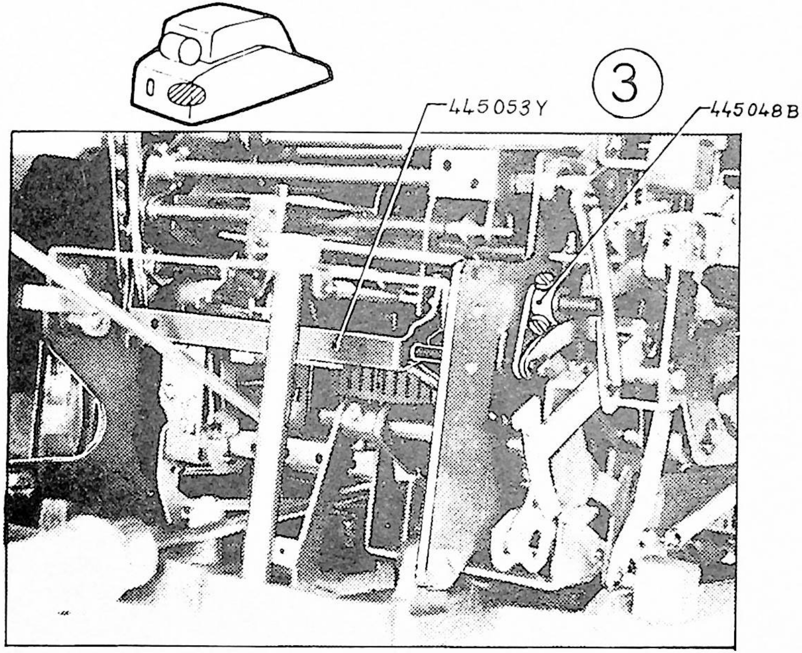
yes → Continue rotating the main shaft slowly and make sure that crank 445041U (fig. 2) clears wing A by 0.1 to 0.3mm . If necessary act on arm 445053Y at the shaded area (fig. 2)

no → In order to obtain clearance of 0.2 mm maximum shown in fig. 1 push bridge 445053Y (fig. 3) toward front of machine and adjust angular position of crank 445048B (fig. 3) (do not disturb axial position of the crank)

Continue rotating the main shaft slowly and make sure that crank 445041U (fig. 2) clears wing A by 0.1 to 0.3mm . If necessary act on arm 445053Y at the shaded area (fig. 2)

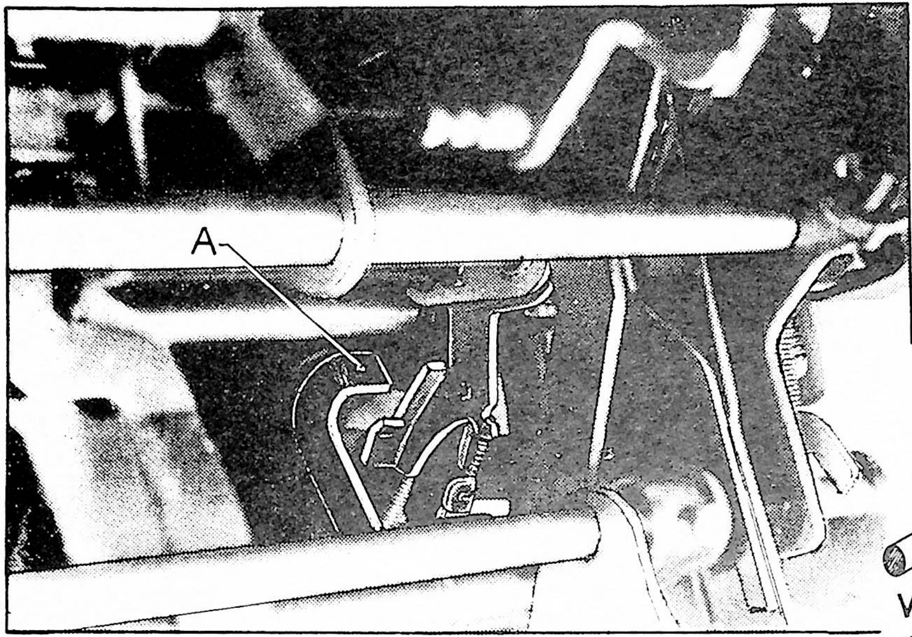
Plug in cord

FFG



③

MULTIPLICATION STOP CONTROL ARM 445041U ADJUSTMENT



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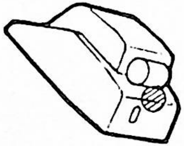
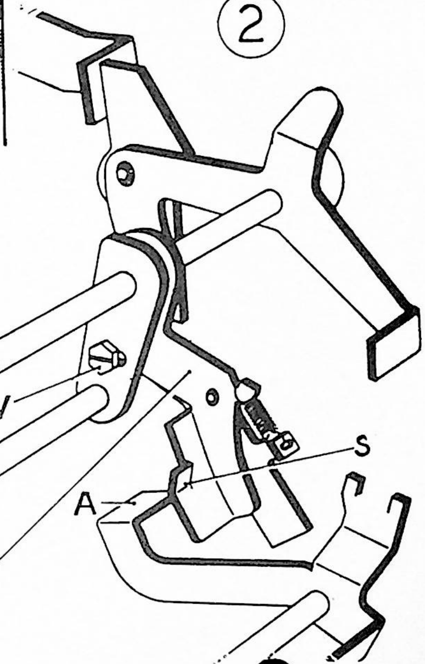
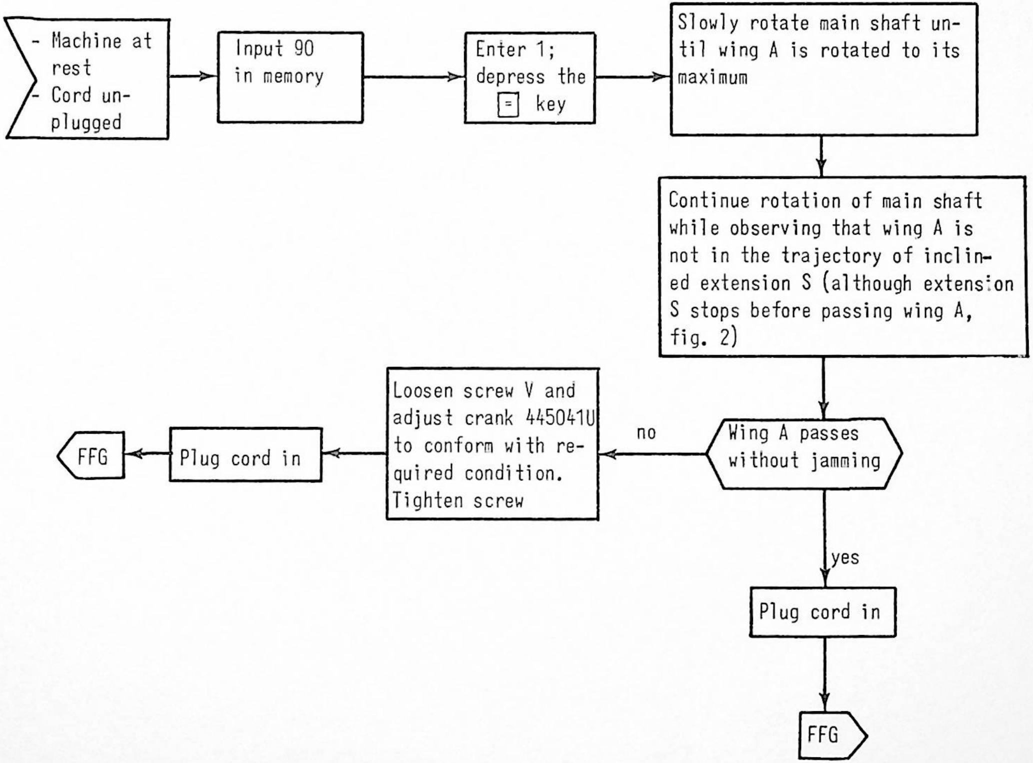






- Machine at rest
- Cord unplugged

Input 90 in memory

Enter 1; depress the = key

Slowly rotate main shaft until wing A is rotated to its maximum

Continue rotation of main shaft while observing that wing A is not in the trajectory of inclined extension S (although extension S stops before passing wing A, fig. 2)

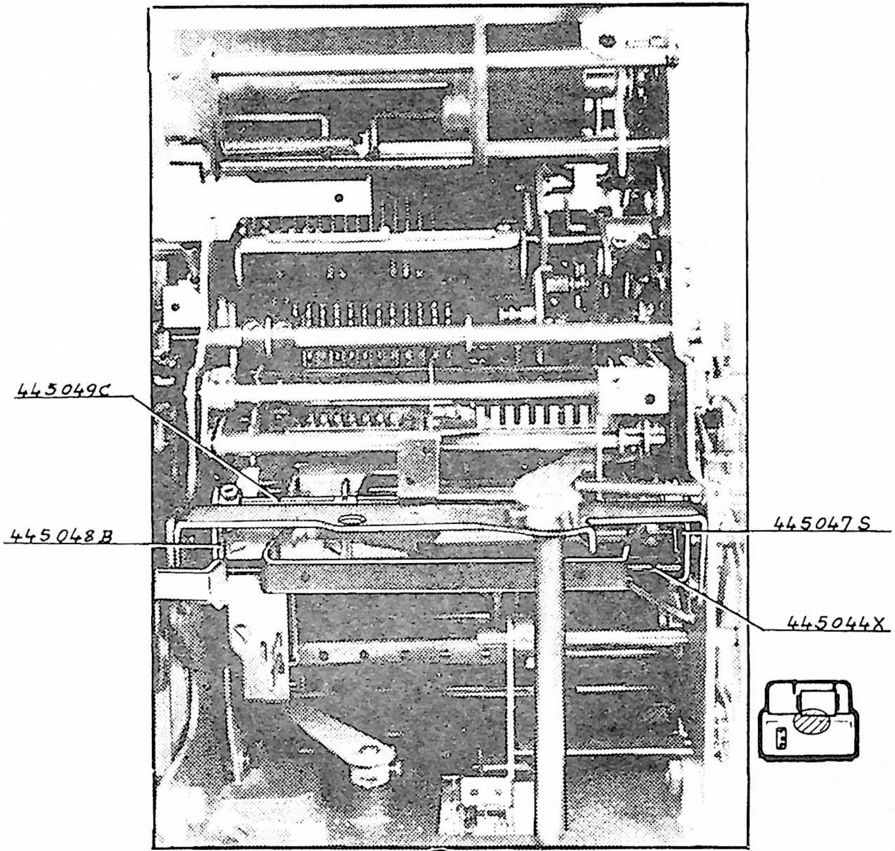
Wing A passes without jamming

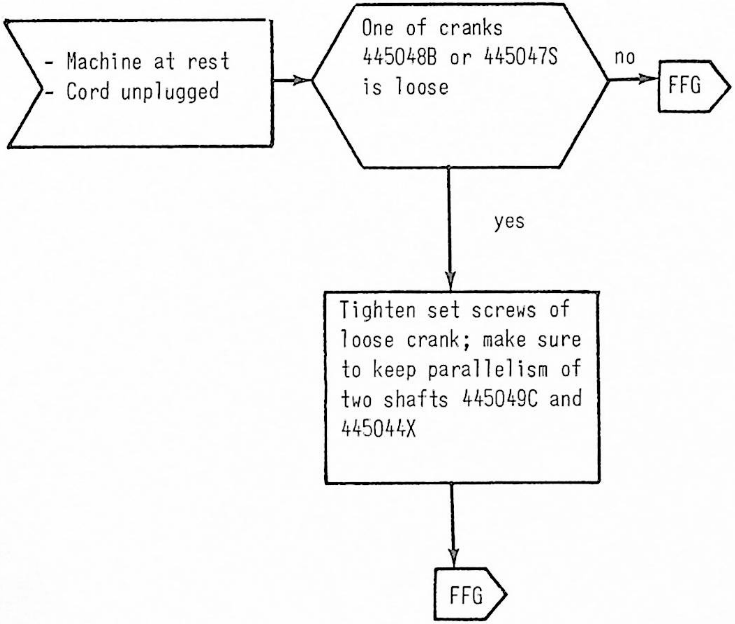
Loosen screw V and adjust crank 445041U to conform with required condition. Tighten screw

Plug cord in

Plug cord in

QUALITY FEELER BAIL CRANK ADJUSTMENT



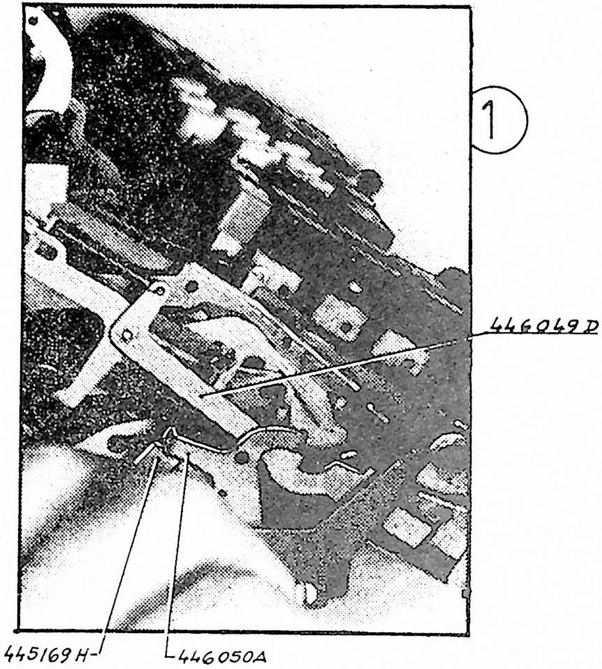


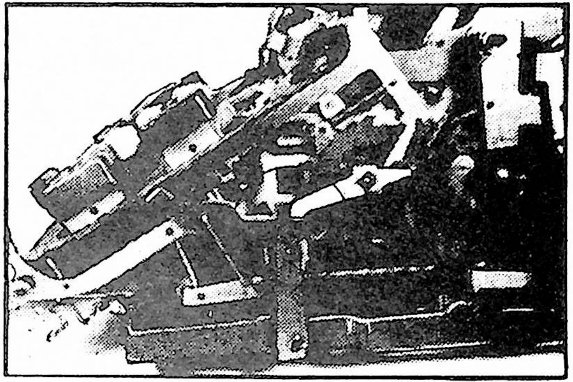
- Machine at rest
- Cord unplugged

One of cranks 445048B or 445047S is loose

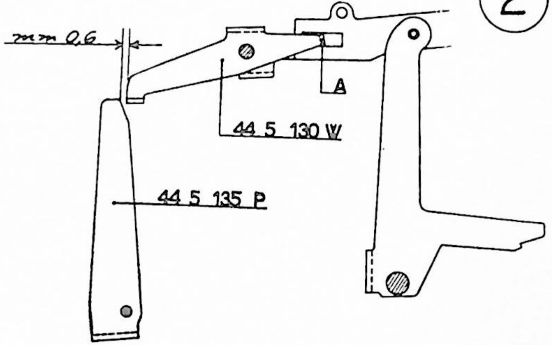
Tighten set screws of loose crank; make sure to keep parallelism of two shafts 445049C and 445044X

AUTOMATIC MEMORY INPUT COMMAND HOOK 445085R ADJUSTMENT





2



- Machine at rest
- Cord unplugged

(MC24)
Set automatic
Total "on"

Lower hook 446049D and rotate bridge 445169H clockwise to have it latched by arm 446050A (fig. 1)

In these conditions the clearance between 445130W and bridge 445135P is 0.6 mm max. (fig. 2)

yes

no

Form bridge 445135P to obtain required clearance

- Plug cord in
- Depress the (NA) (non-add) key twice

Manually lower hook 445085R (fig. 3)

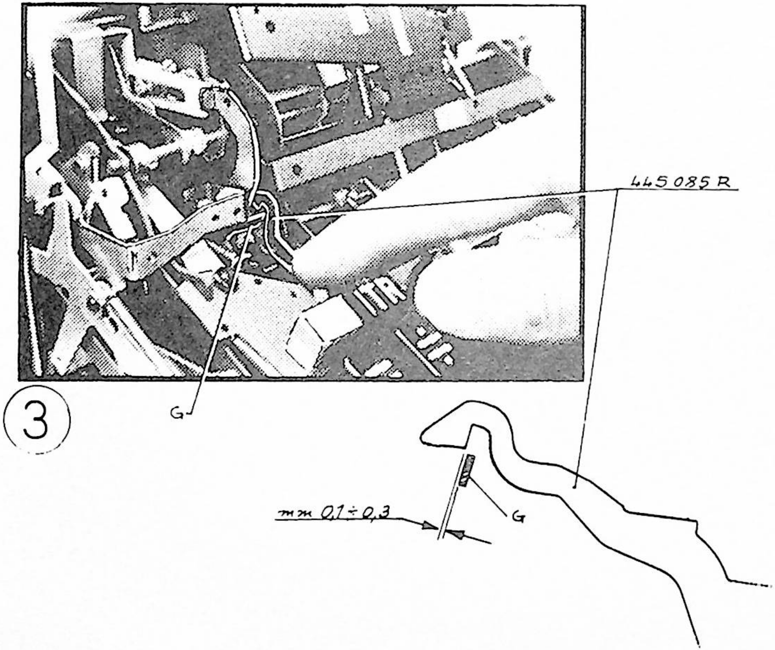
Hook 445085R hooks wing G with a clearance of 0.1 to 0.3 mm

yes

FFG

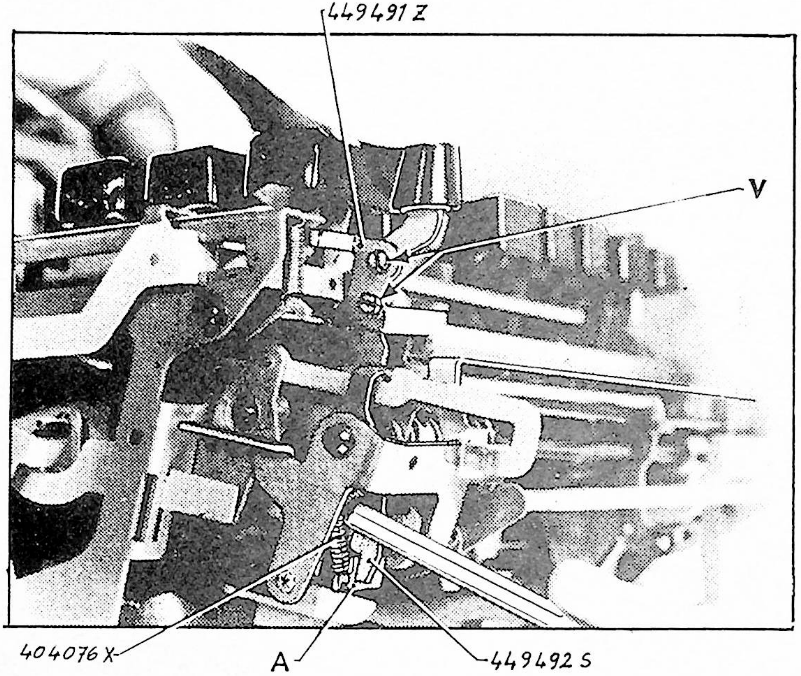
no

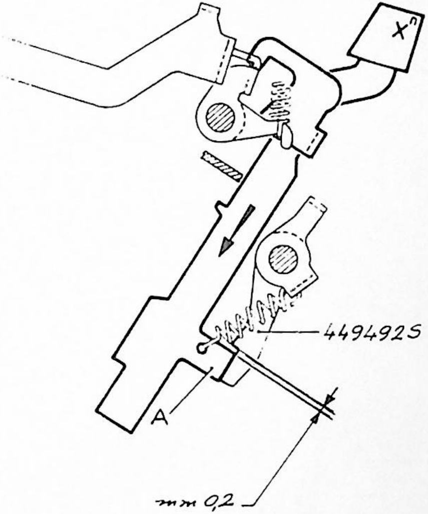
Form wing G (fig. 3)



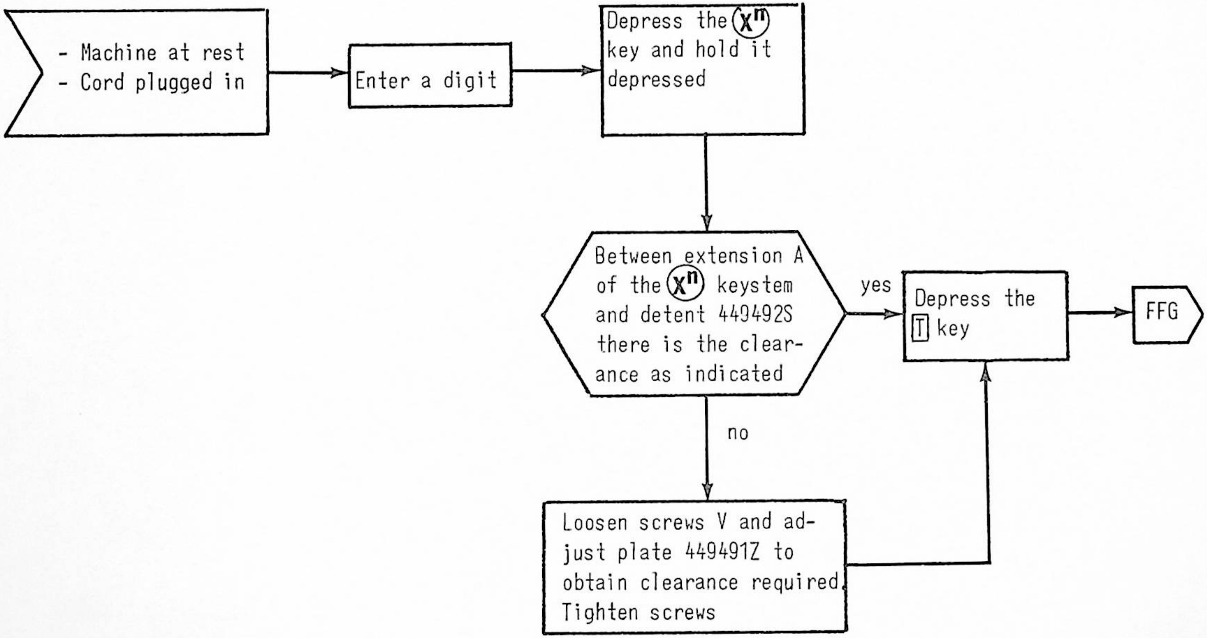
③

MC26 - DISPLACEMENT OF THE X^n KEY ADJUSTMENT

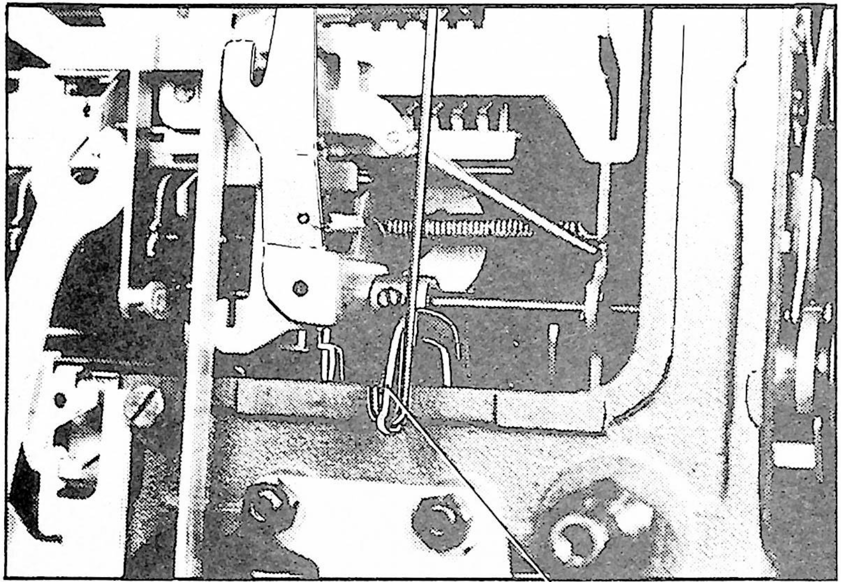


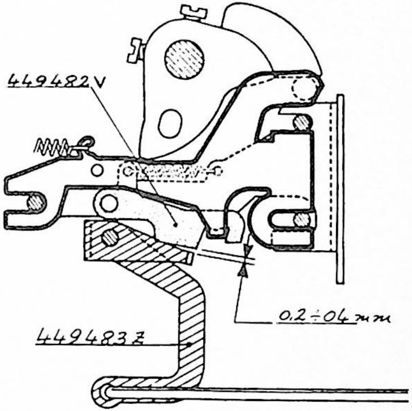


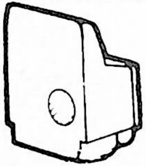
Before making this inspection, be sure that spring 404076X is hooked

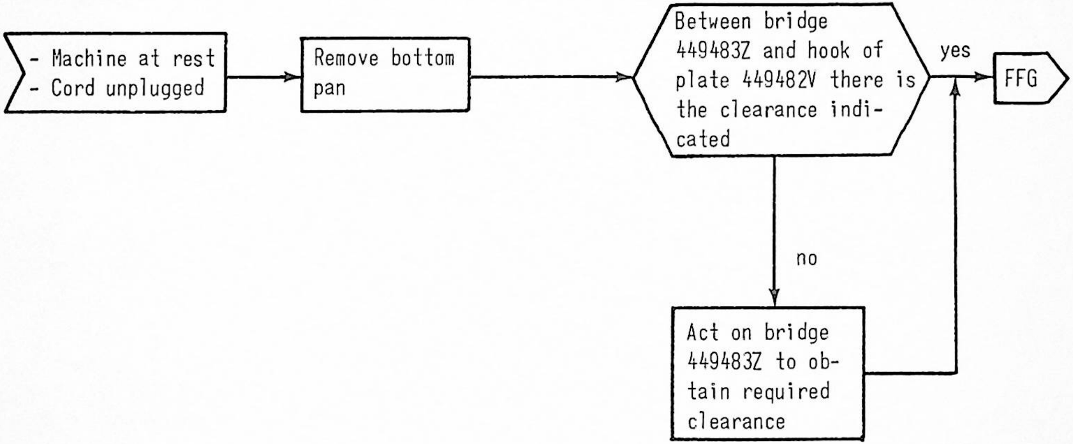

- Machine at rest
- Cord plugged in
Enter a digit
Depress the X^n key and hold it depressed
Between extension A of the X^n keystem and detent 449492S there is the clearance as indicated
yes
Depress the T key
FFG
no
Loosen screws V and adjust plate 449491Z to obtain clearance required. Tighten screws

MC26 - STOPS CLEAR PLATE CONTROL BRIDGE 449483Z ADJUSTMENT

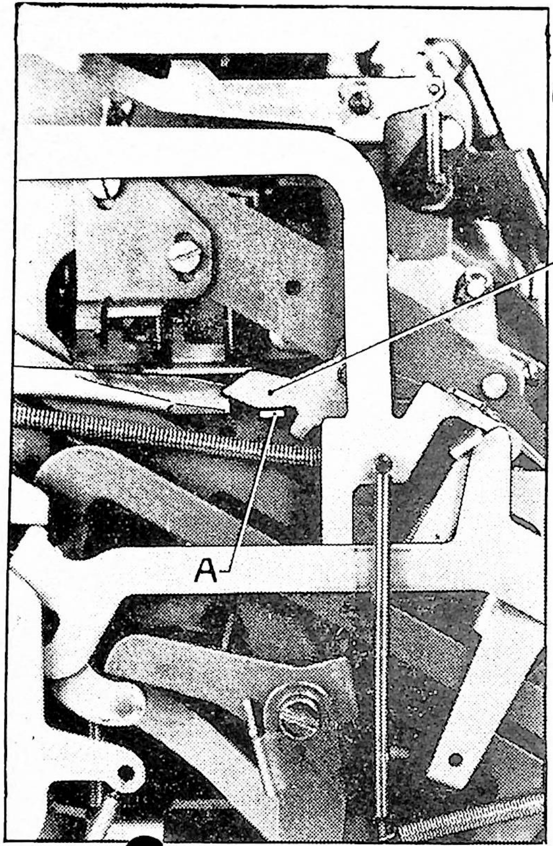


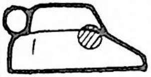


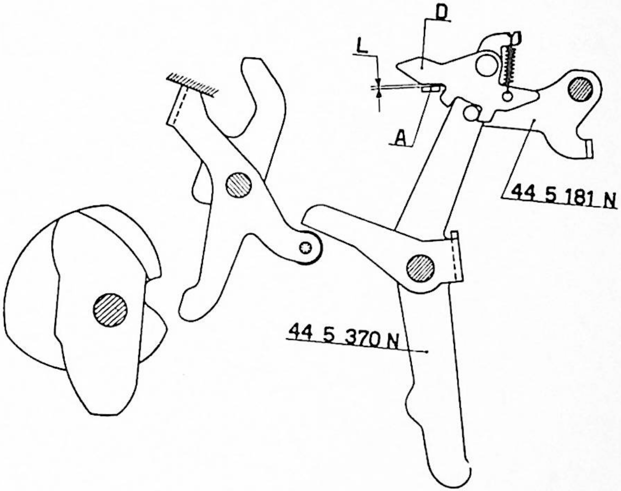


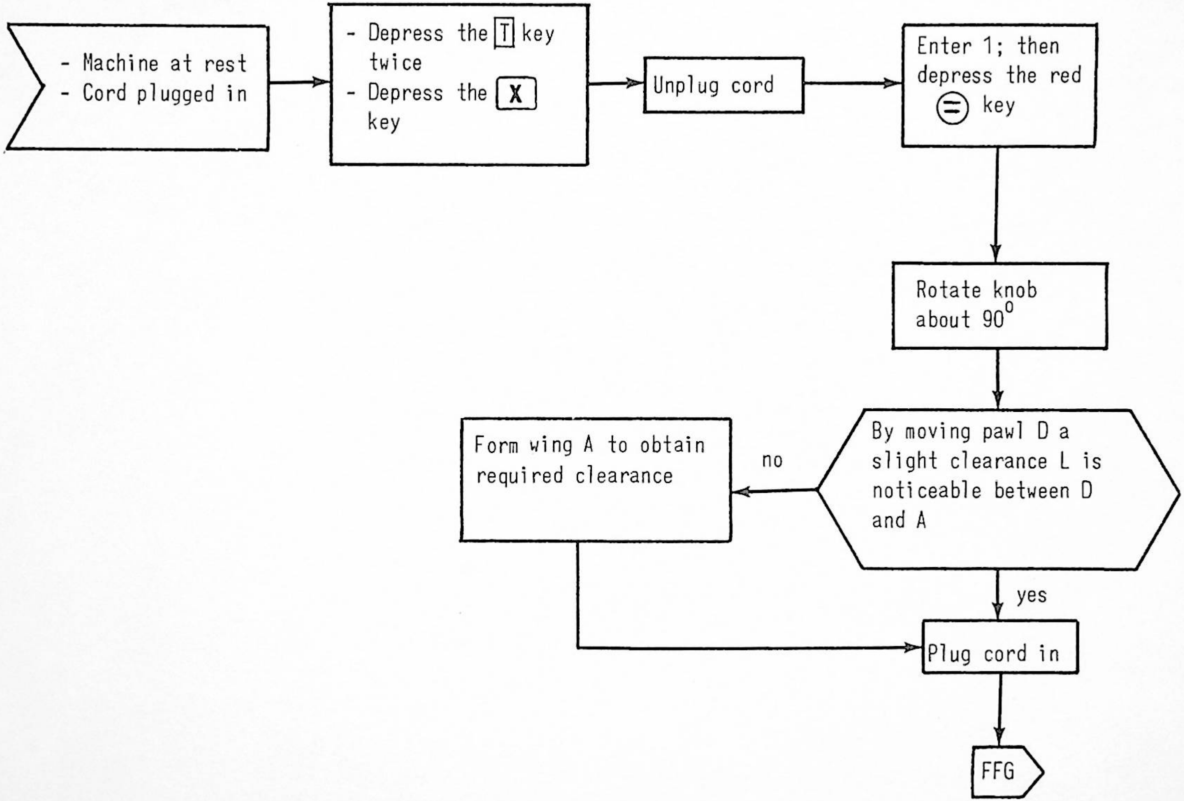

- Machine at rest
- Cord unplugged
Remove bottom pan
Between bridge 449483Z and hook of plate 449482V there is the clearance indicated
yes
FFG
no
Act on bridge 449483Z to obtain required clearance

PASSING CLEARANCE ADJUSTMENT BETWEEN BRIDGE 445370N AND WING OF REGISTER INVERSION COMMAND CRANK 445181N

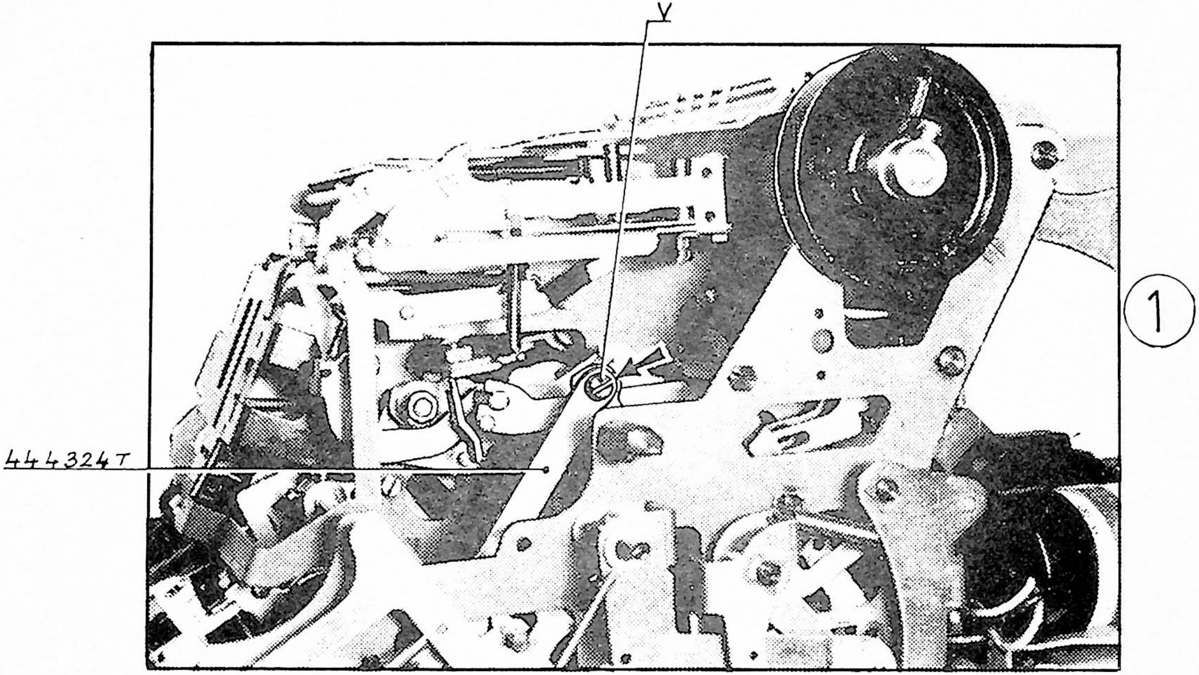


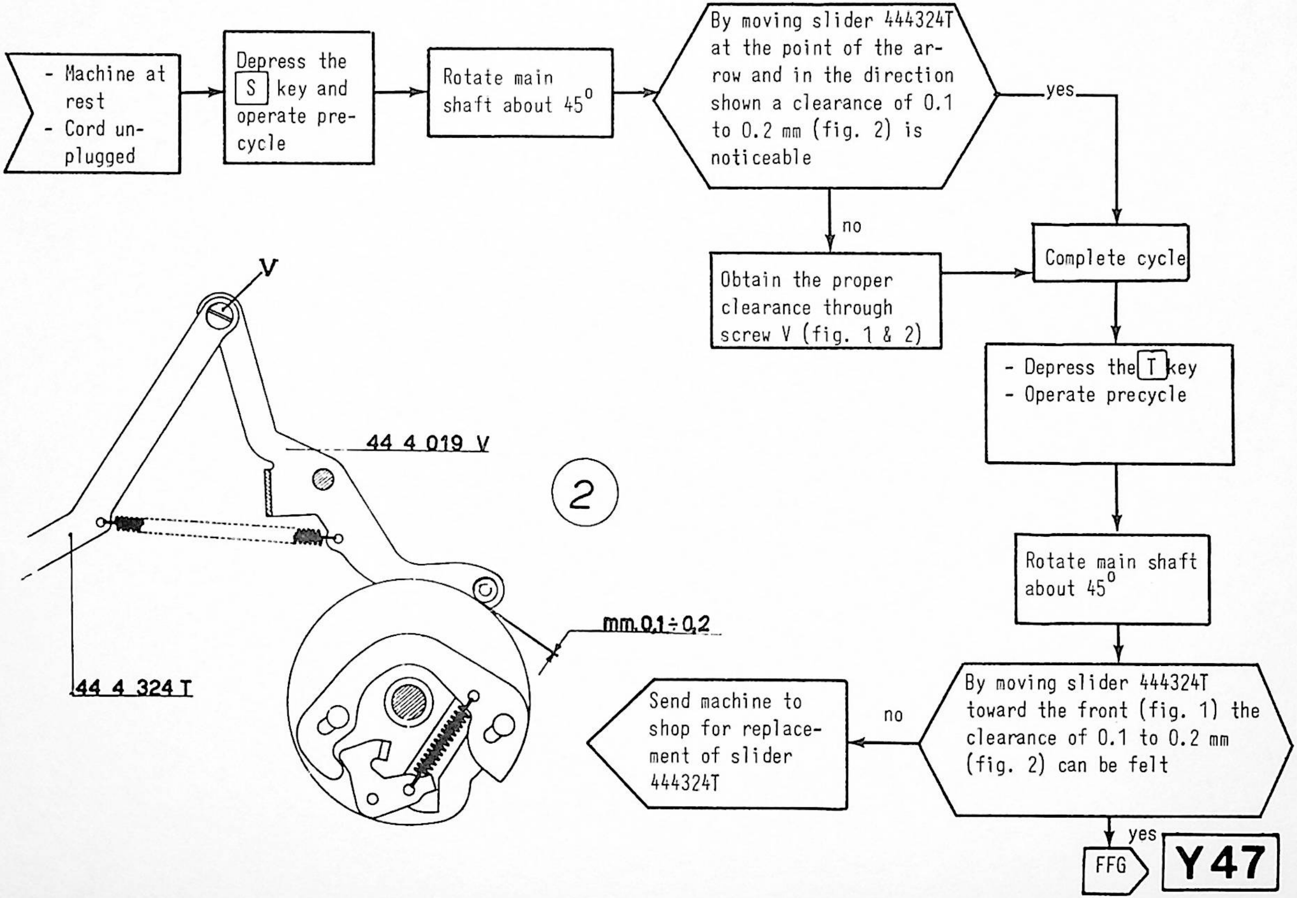





- Machine at rest
- Cord plugged in
- Depress the T key twice
- Depress the X key
Unplug cord
Enter 1; then depress the red = key
Rotate knob about 90°
By moving pawl D a slight clearance L is noticeable between D and A
no
Form wing A to obtain required clearance
yes
Plug cord in
FFG

MC26 - ADJUSTING AMOUNT OF ROTATION OF MOTOR TRIP LEVER 444019V THROUGH SLIDER 444324T





- Machine at rest
- Cord unplugged

Depress the S key and operate precycle

Rotate main shaft about 45^0

By moving slider 444324T at the point of the arrow and in the direction shown a clearance of 0.1 to 0.2 mm (fig. 2) is noticeable

no: Obtain the proper clearance through screw V (fig. 1 & 2)

yes: Complete cycle

- Depress the T key
- Operate precycle

Rotate main shaft about 45^0

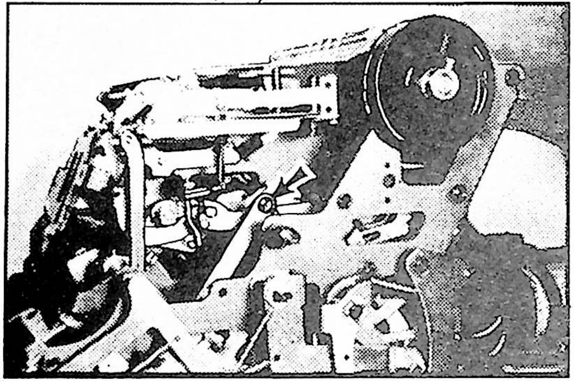
By moving slider 444324T toward the front (fig. 1) the clearance of 0.1 to 0.2 mm (fig. 2) can be felt

no: Send machine to shop for replacement of slider 444324T

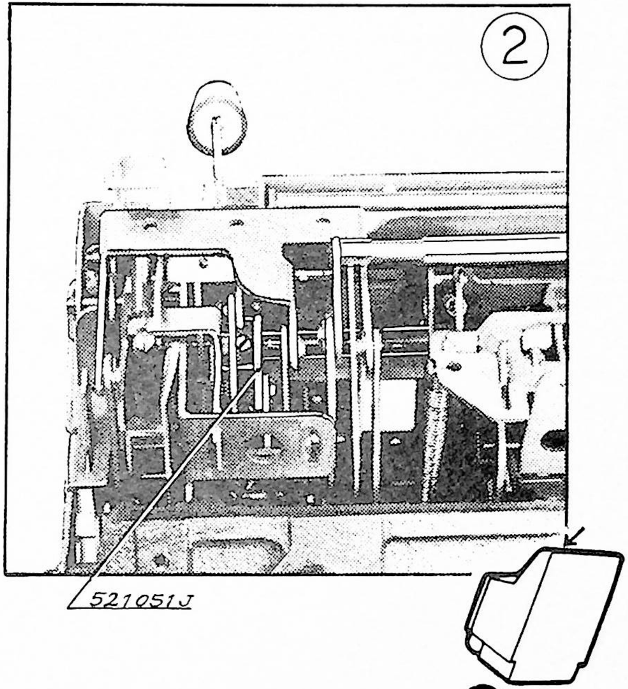
yes: FFG

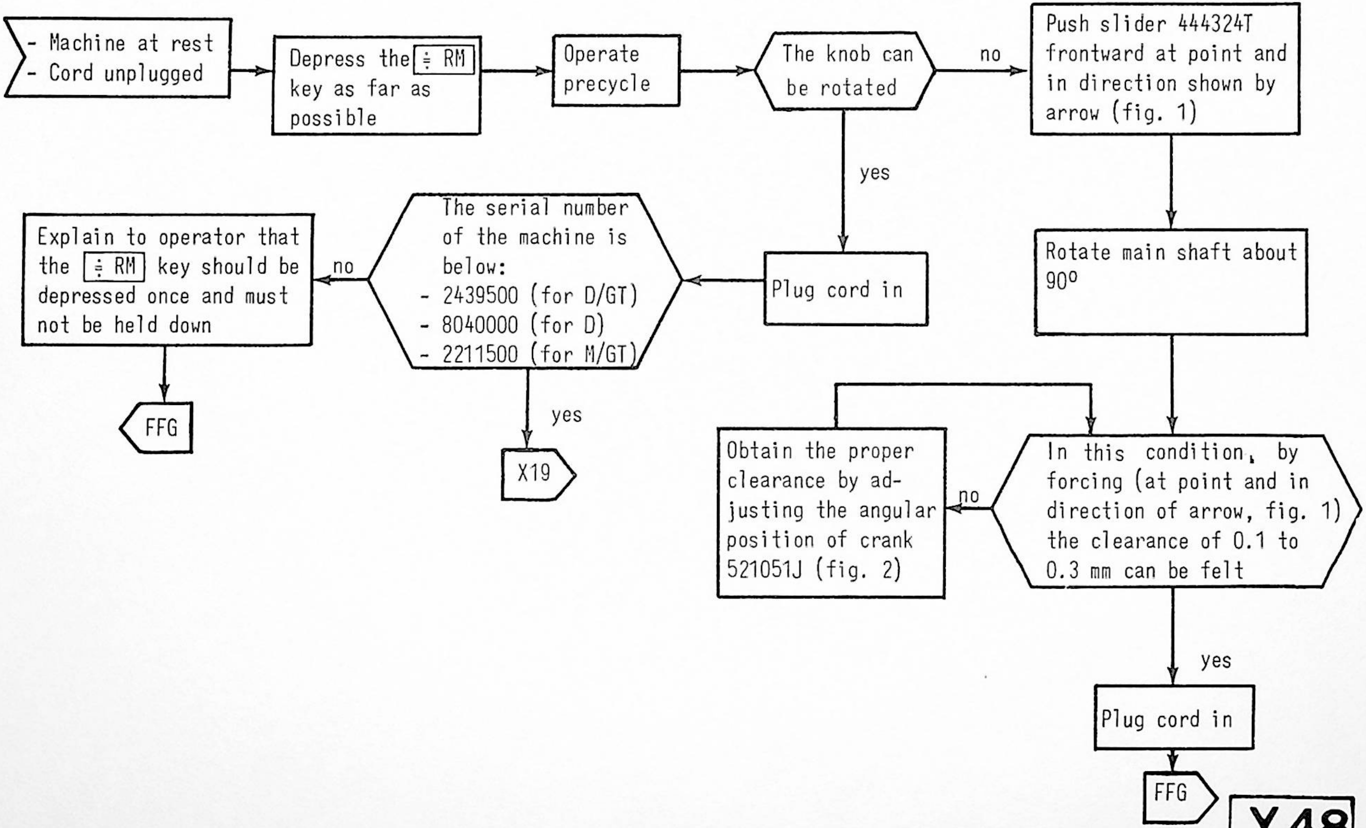
MC26 - ADJUSTING MOTOR TRIP DISPLACEMENT MADE BY ≐ RM KEY DEPRESSION

①

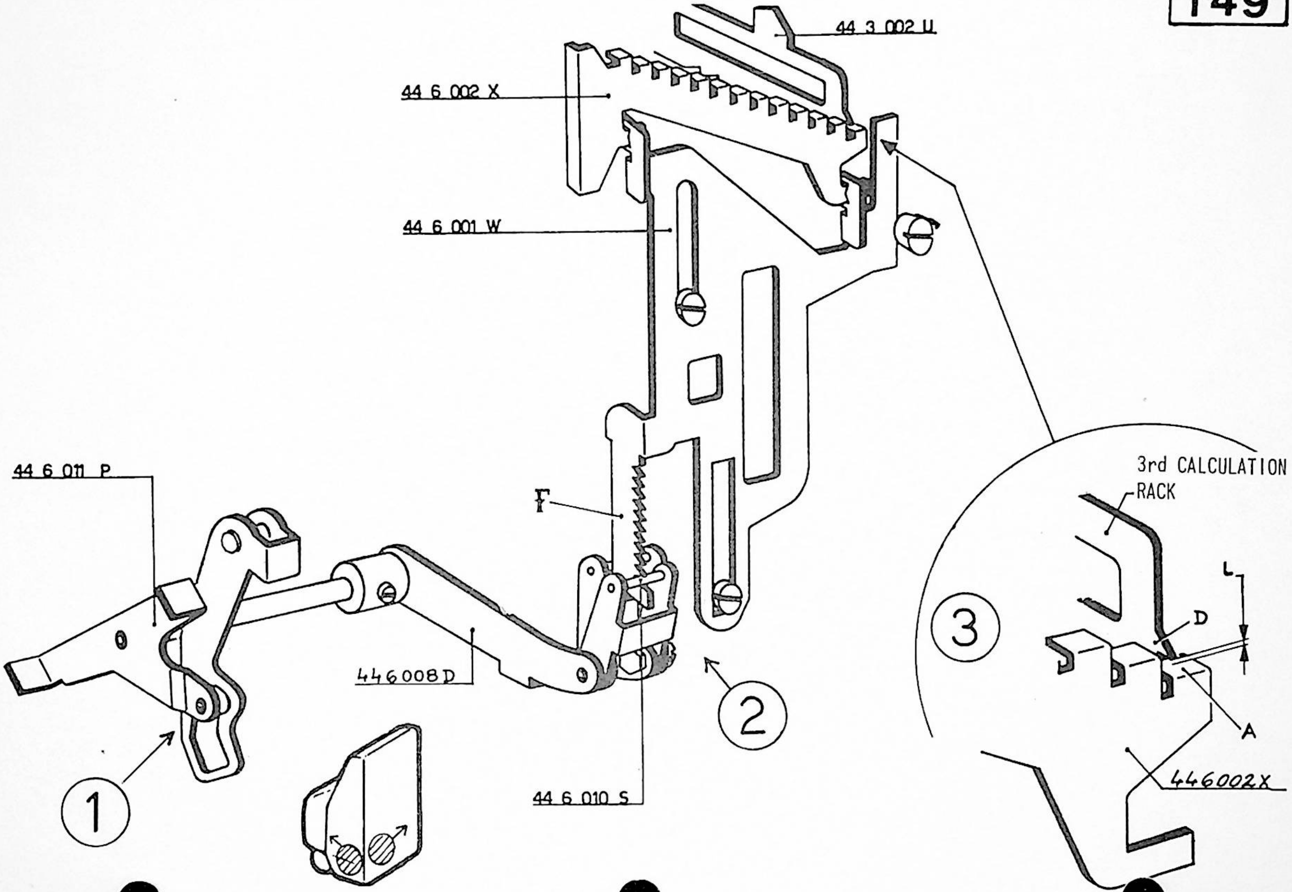


②




- Machine at rest
- Cord unplugged
Depress the ÷ RM key as far as possible
Operate precycle
The knob can be rotated
no
Push slider 444324T frontward at point and in direction shown by arrow (fig. 1)
yes
Rotate main shaft about 90°
Plug cord in
The serial number of the machine is below:
- 2439500 (for D/GT)
- 8040000 (for D)
- 2211500 (for M/GT)
no
Explain to operator that the ÷ RM key should be depressed once and must not be held down
FFG
yes
X19
Obtain the proper clearance by adjusting the angular position of crank 521051J (fig. 2)
no
In this condition, by forcing (at point and in direction of arrow, fig. 1) the clearance of 0.1 to 0.3 mm can be felt
yes
Plug cord in
FFG

ADJUSTING DISPLACEMENT OF THE TABULATION CONTROL CARRIER PLATE 446001W



- Machine at rest
- Cord unplugged

Remove bottom pan

Manually rotate crank 446011P (fig. 1) until its roller contacts front of slot (position shown in fig. 1)

Check that the positioner 446010S is in the last notch of rack F (fig. 2)

Flex arm 445140G (fig. 4) to disengage it from wing A (fig. 4)

Verify that detent 446010S is located in the last notch of rack F (fig. 2)

Step A of stairs 446002X has a minimum entry clearance L in respect to tooth D of the third calculation rack (fig. 3)

no

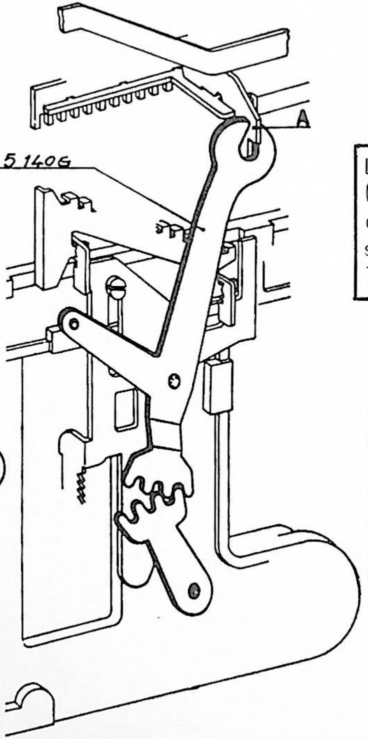
Loosen the screw of arm 446008D (fig. 1) (maintain roller of crank 446011P against front of slot until completion of following step)

Verify that detent 446010S is still in the last notch of rack F (fig. 2) to obtain clearance shown in fig. 3 angularly adjust arm 446008D (do not move arm 446008D axially)

yes

Reposition arm 445140G as shown in fig. 4 and return crank 446011P (fig. 1) to its rest position

FFG



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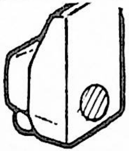
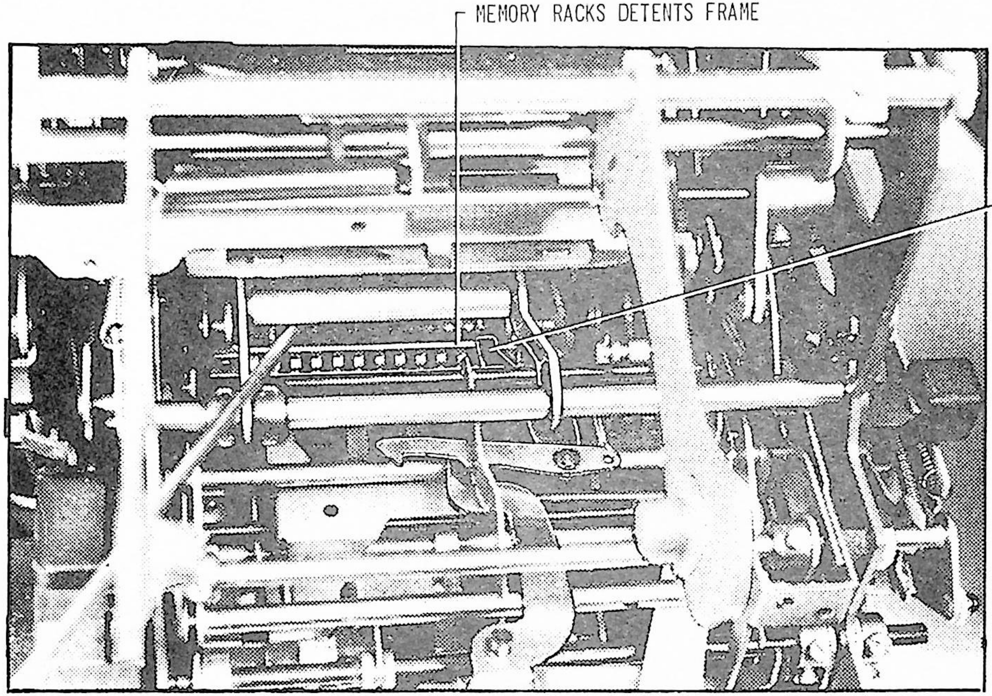
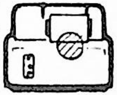
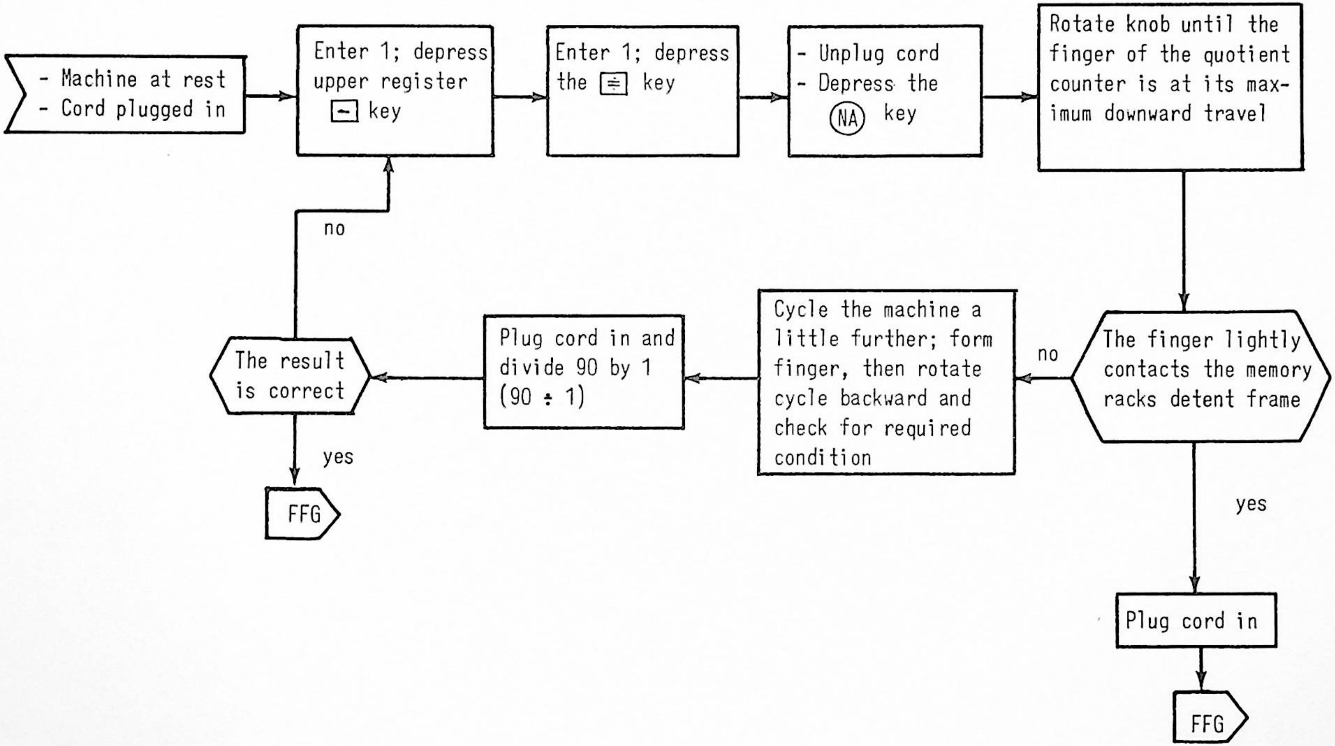


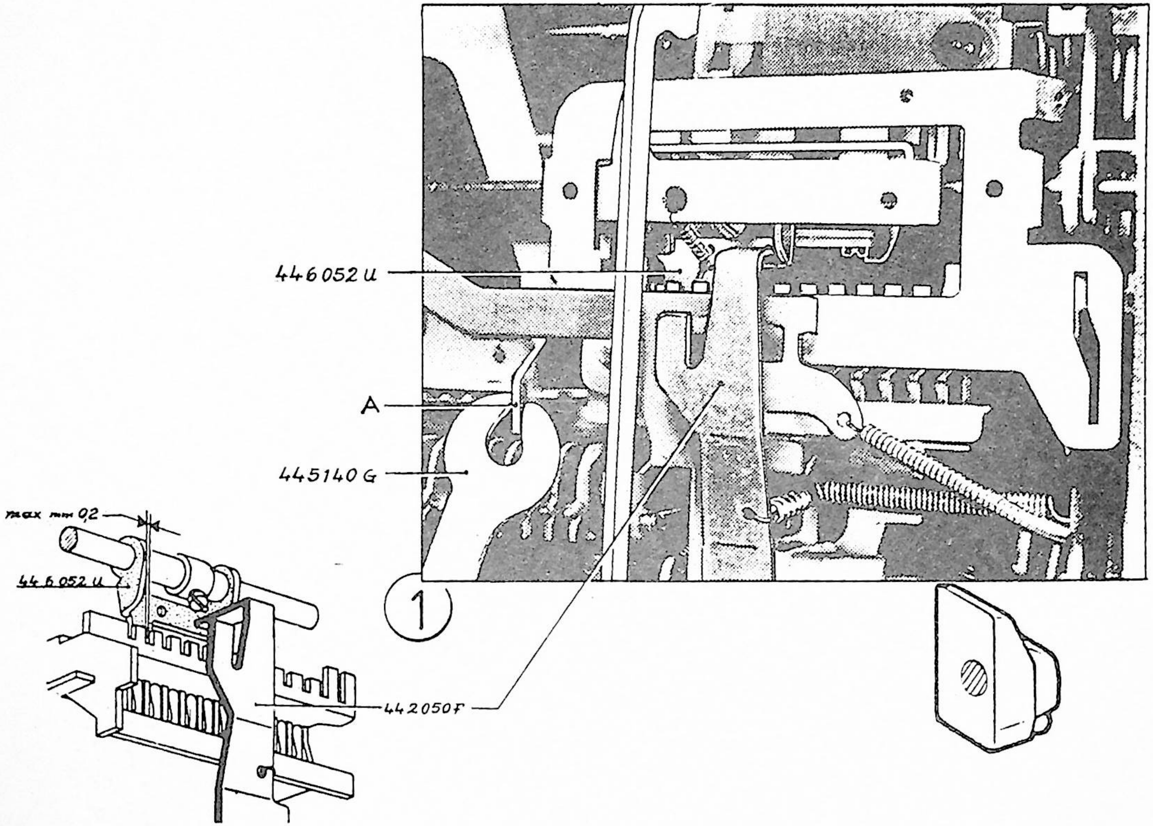
QUOTIENT COUNTER 446022J FINGER ADJUSTMENT






- Machine at rest
- Cord plugged in
Enter 1; depress upper register − key
Enter 1; depress the ÷ key
- Unplug cord
- Depress the NA key
Rotate knob until the finger of the quotient counter is at its maximum downward travel
The finger lightly contacts the memory racks detent frame
yes
Plug cord in
FFG
no
Cycle the machine a little further; form finger, then rotate cycle backward and check for required condition
Plug cord in and divide 90 by 1 (90 ÷ 1)
The result is correct
no
yes
FFG

STOP SECTION TABULATION ADJUSTMENT



- Machine at rest
- Cord unplugged

Enter 111 and add it

Enter a digit; then depress the ÷ key

Operate the precycle

Rotate main shaft one complete cycle (360°)

Anti rebound pawl 442052U is engaged with the escapement rack with a lateral clearance of 0.2 mm maximum (fig. 1)

yes → FFG

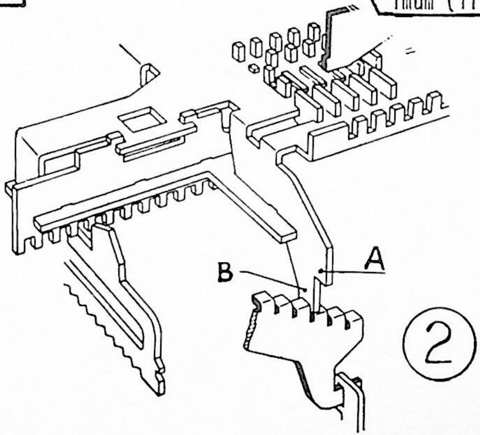
no → Flex arm 445140G and disengage it from wing A (fig. 1)

Holding wing A (fig. 2) act on the rearward extension B to obtain the clearance in the figure

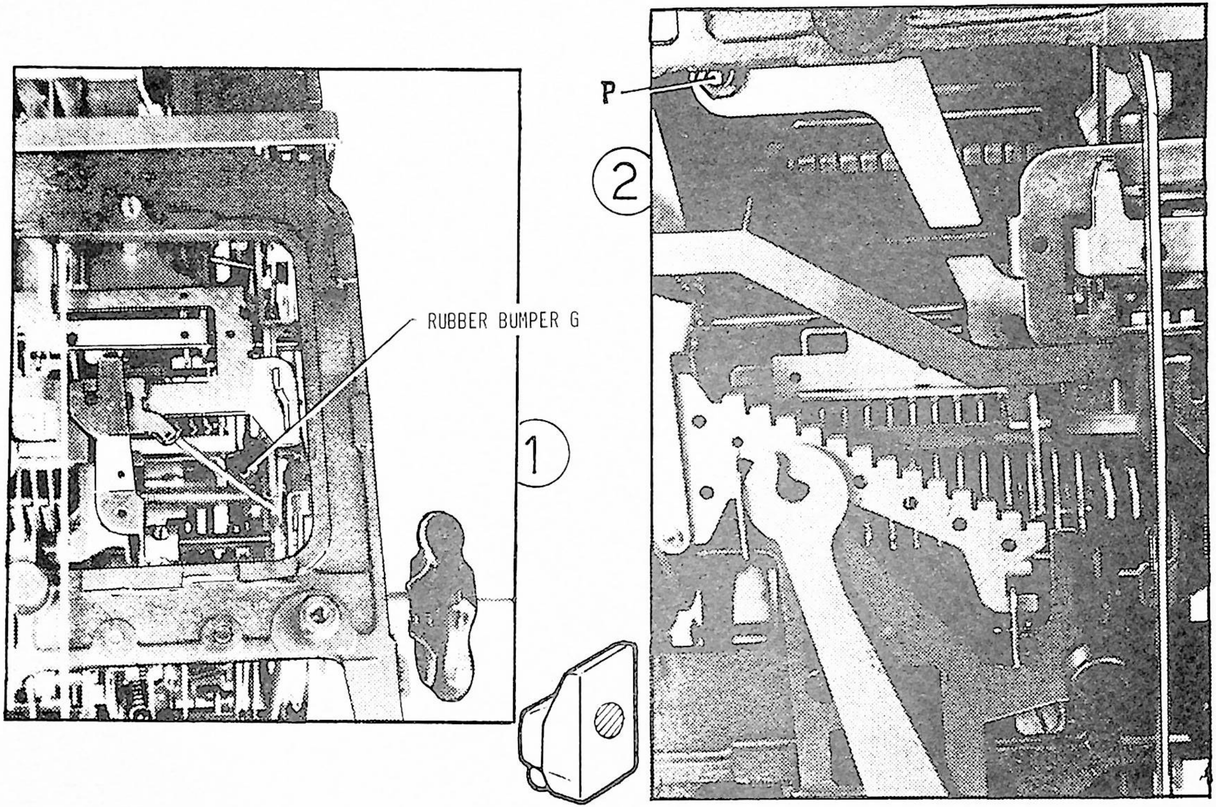
Engage arm 445140G with wing A

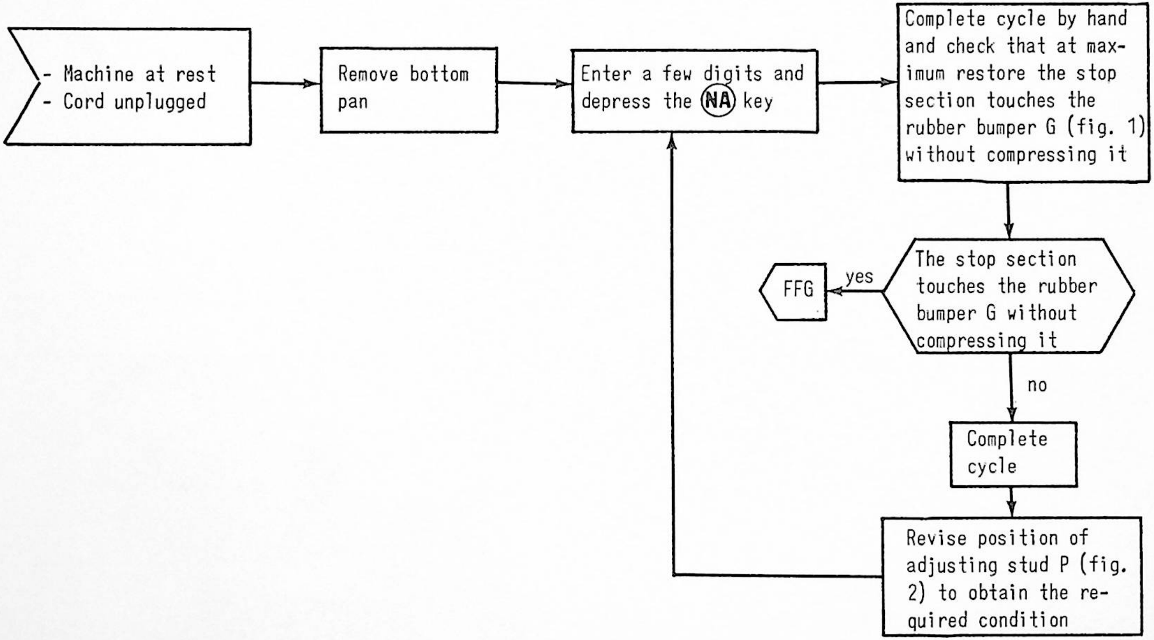
Plug cord in

FFG

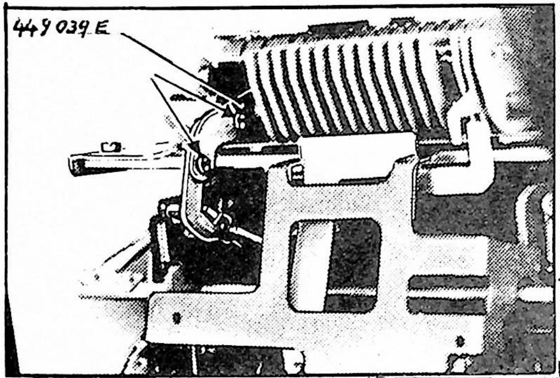


STOP SECTION RESTORE ADJUSTMENT



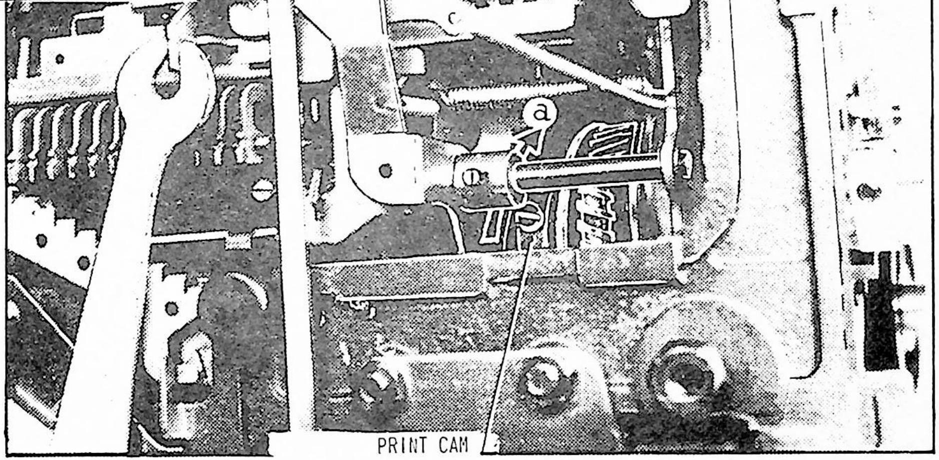

- Machine at rest
- Cord unplugged
Remove bottom pan
Enter a few digits and depress the NA key
Complete cycle by hand and check that at maximum restore the stop section touches the rubber bumper G (fig. 1) without compressing it
The stop section touches the rubber bumper G without compressing it
yes
FFG
no
Complete cycle
Revise position of adjusting stud P (fig. 2) to obtain the required condition

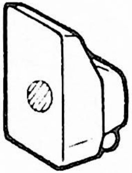
PRINT TRIP ADJUSTMENT

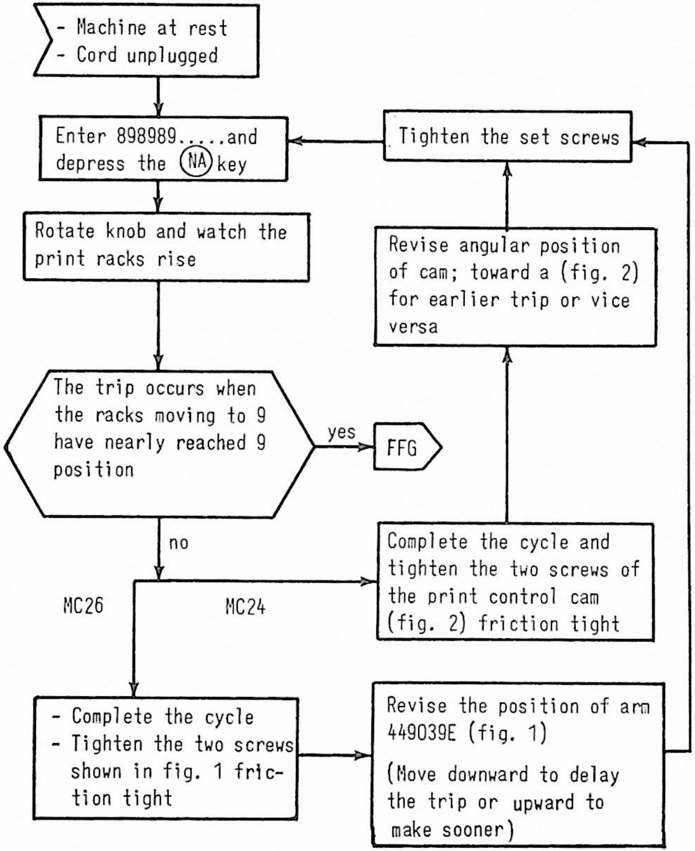


①

②



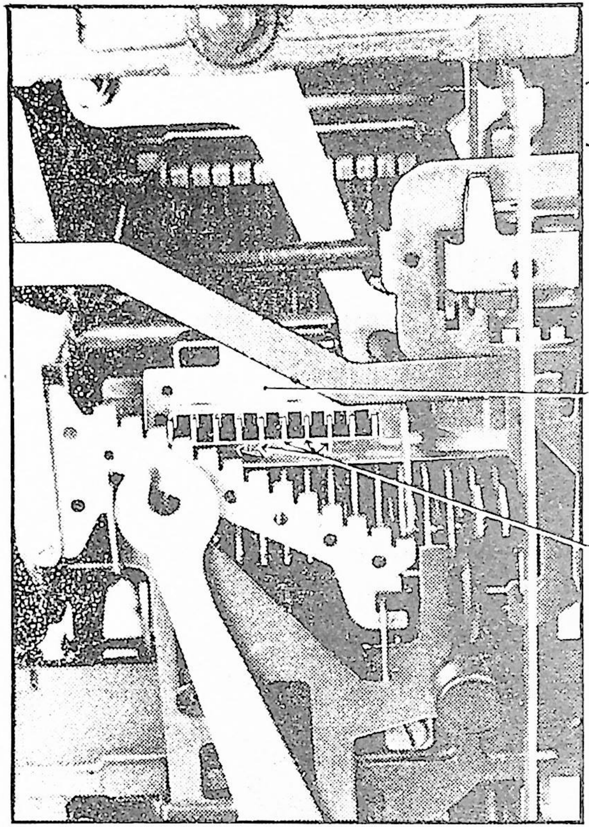


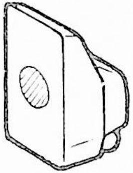

- Machine at rest
- Cord unplugged
Enter 898989.....and depress the (NA) key
Rotate knob and watch the print racks rise
The trip occurs when the racks moving to 9 have nearly reached 9 position
yes
FFG
no
MC26
MC24
Complete the cycle and tighten the two screws of the print control cam (fig. 2) friction tight
Revise angular position of cam; toward a (fig. 2) for earlier trip or vice versa
Tighten the set screws
- Complete the cycle
- Tighten the two screws shown in fig. 1 friction tight
Revise the position of arm 449039E (fig. 1)
(Move downward to delay the trip or upward to make sooner)

STOP SECTION CENTERING ADJUSTMENT

Y55

①





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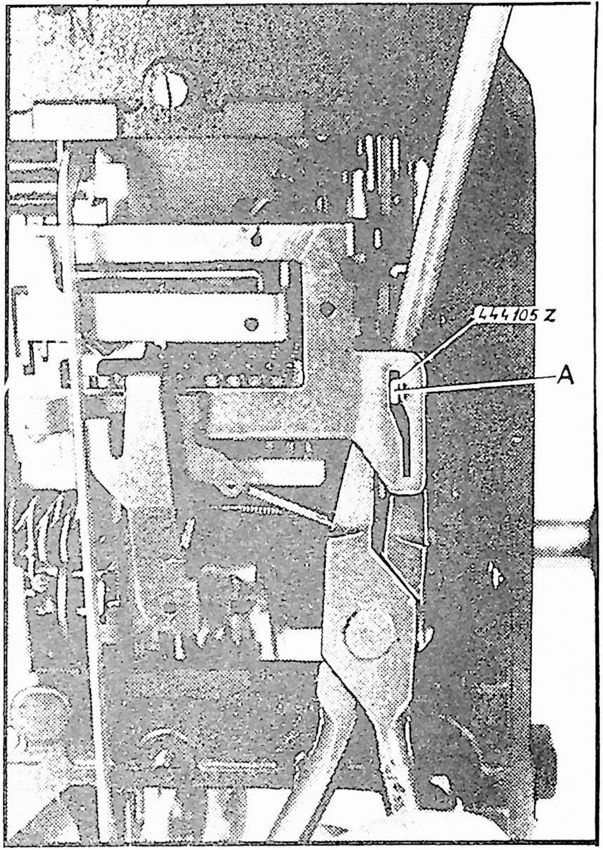


- Machine at rest

→ Axially move the zero stop plate and check that the calculation racks remain controlled by the teeth of the plate (fig. 1)

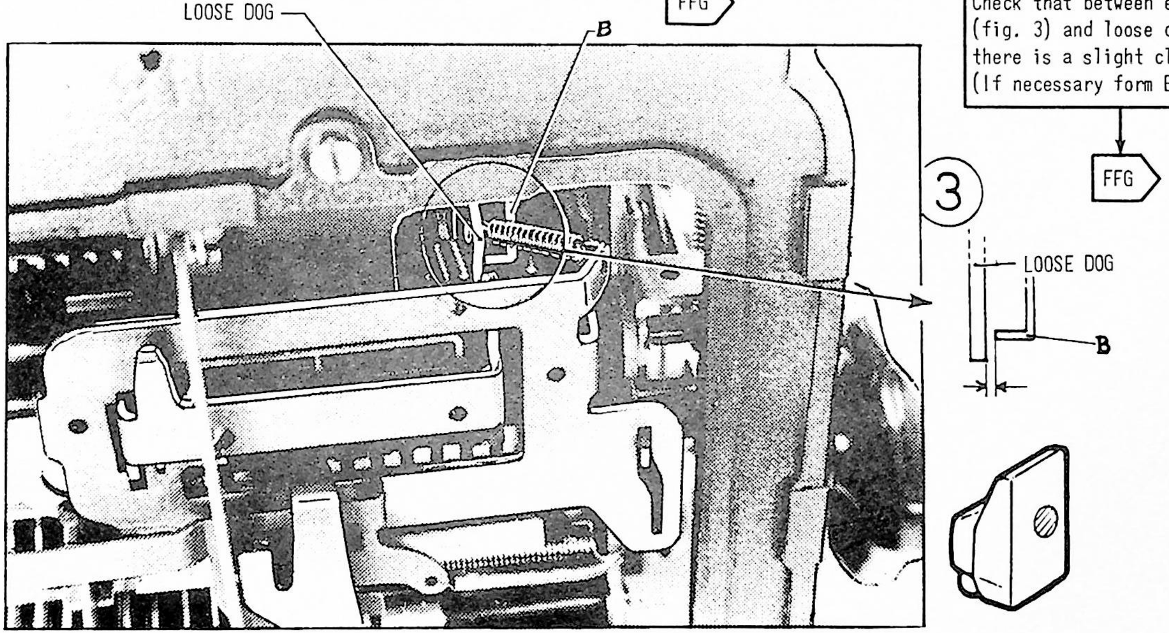
→ This condition exists

yes → FFG

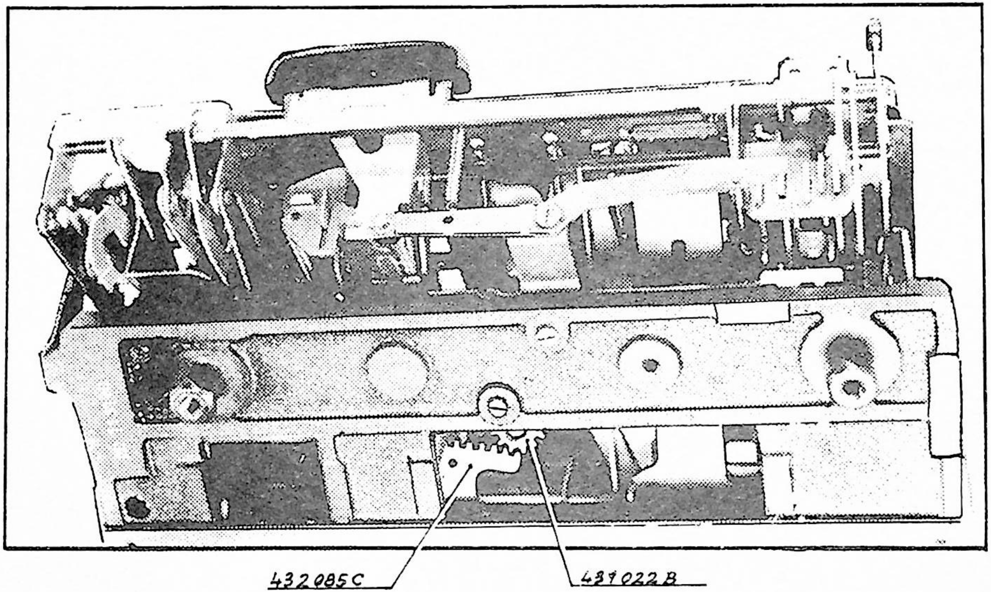
no → Firmly hold plate 444105Z in the manner and position shown in fig. 2. With former act on extension A to center the stop-section

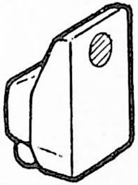
→ Check that between extension B (fig. 3) and loose dog 432074Q there is a slight clearance. (If necessary form B)

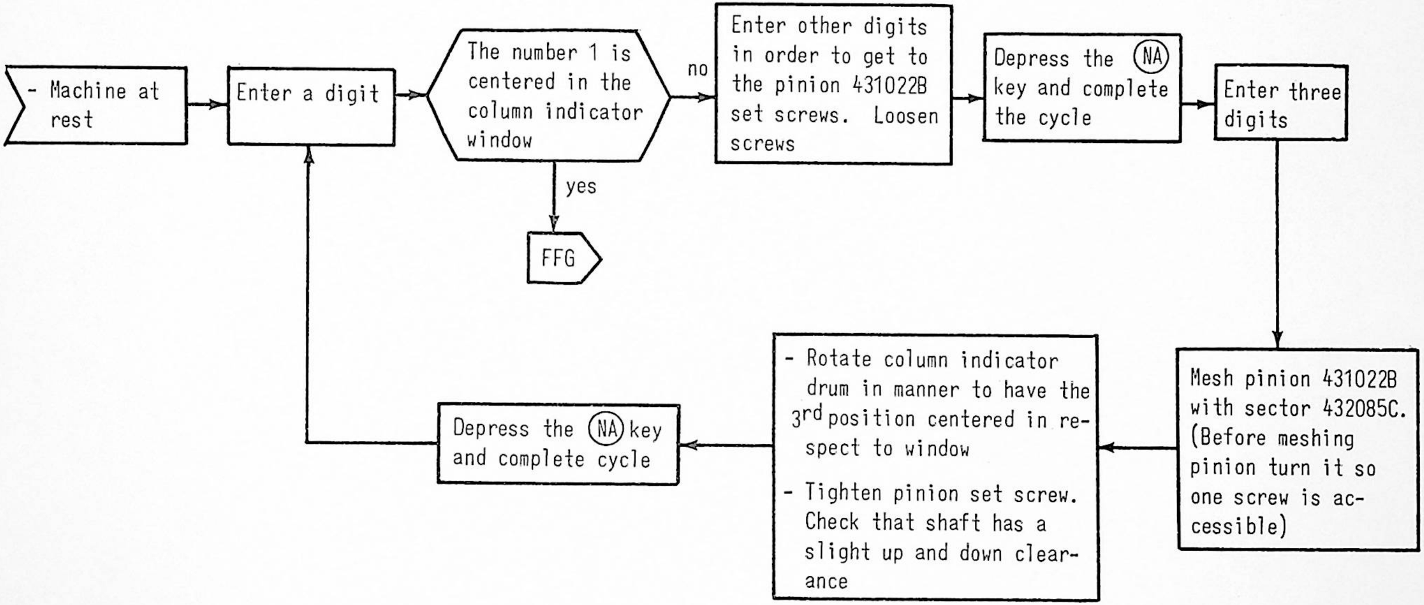
→ FFG



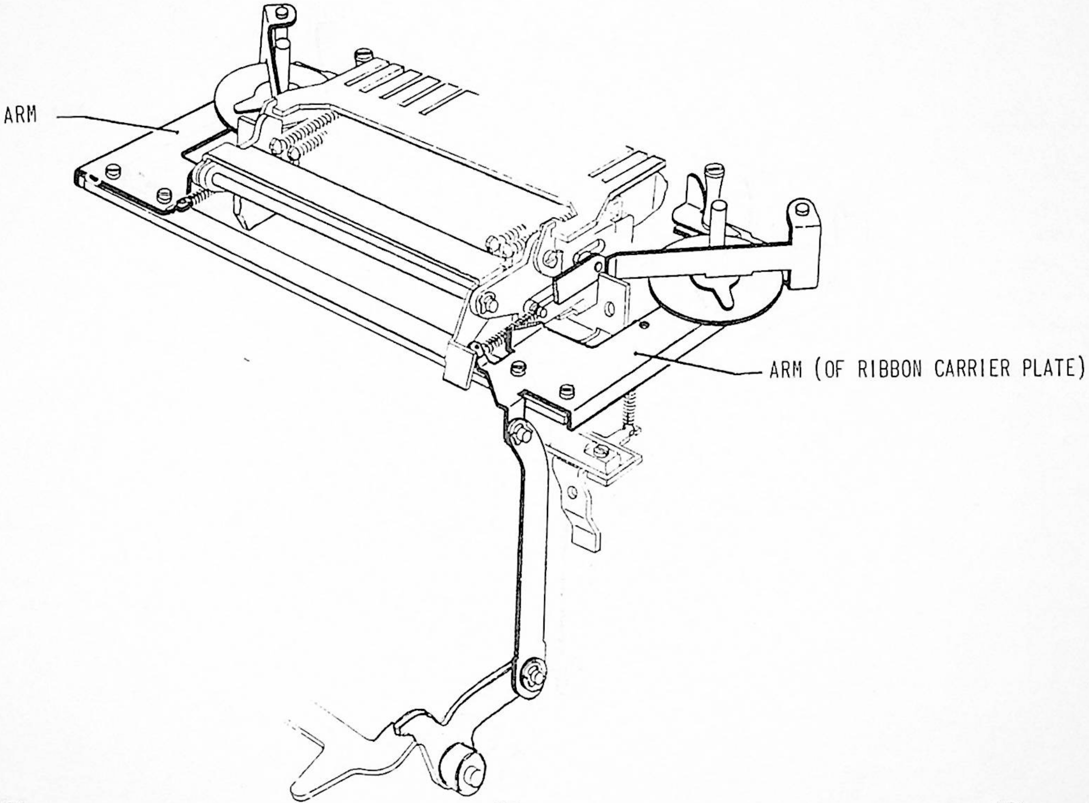
MC24 - COLUMN INDICATOR TIMING

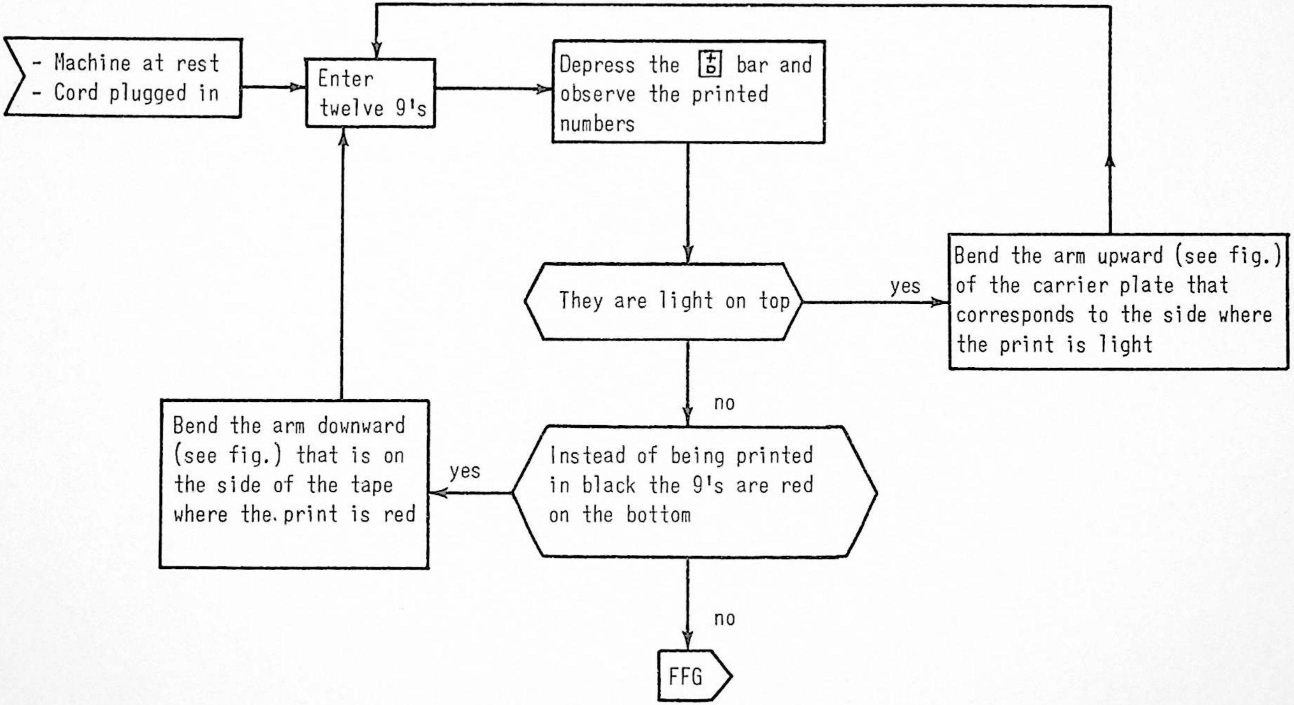




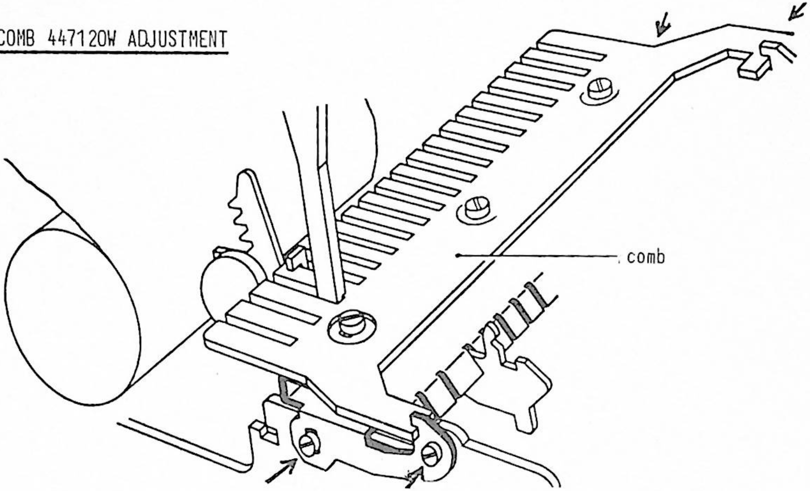

- Machine at rest
Enter a digit
The number 1 is centered in the column indicator window
no
yes
FFG
Enter other digits in order to get to the pinion 431022B set screws. Loosen screws
Depress the NA key and complete the cycle
Enter three digits
Mesh pinion 431022B with sector 432085C. (Before meshing pinion turn it so one screw is accessible)
- Rotate column indicator drum in manner to have the 3rd position centered in respect to window
- Tighten pinion set screw. Check that shaft has a slight up and down clearance
Depress the NA key and complete cycle

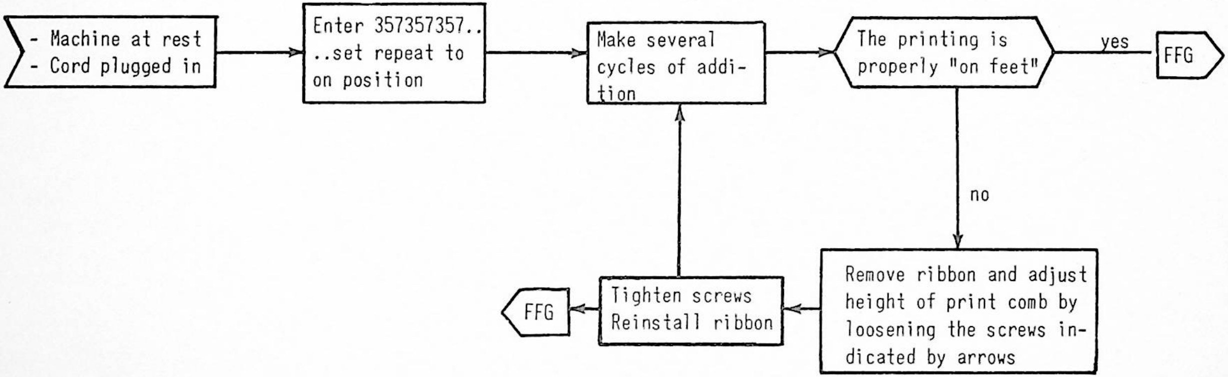
RIBBON SPOOL CARRIER PLATE ADJUSTMENT



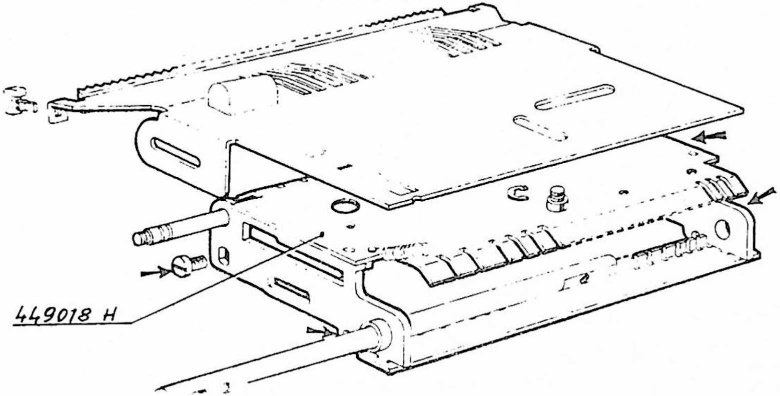

- Machine at rest
- Cord plugged in
Enter twelve 9's
Depress the +/D bar and observe the printed numbers
They are light on top
yes
Bend the arm upward (see fig.) of the carrier plate that corresponds to the side where the print is light
no
Instead of being printed in black the 9's are red on the bottom
yes
Bend the arm downward (see fig.) that is on the side of the tape where the print is red
no
FFG

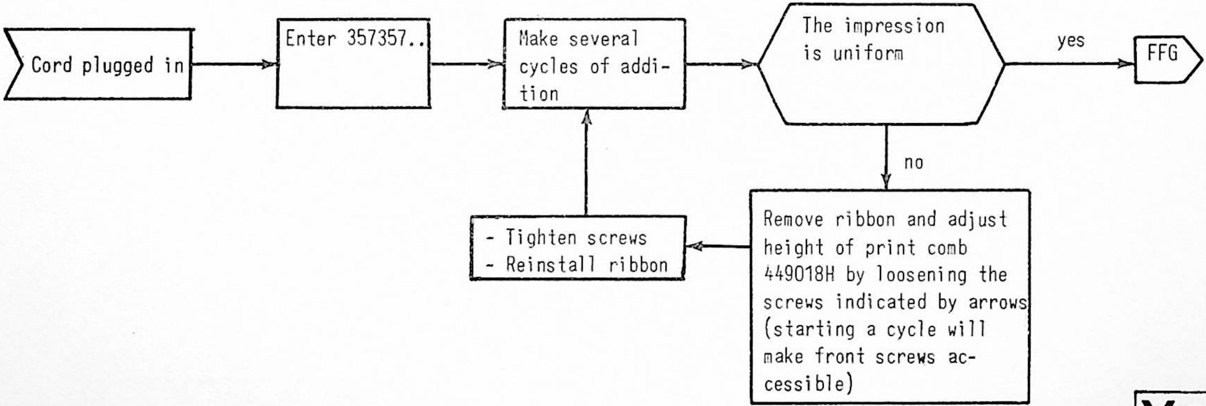
MC24 - PRINT SLIDERS GUIDE COMB 447120W ADJUSTMENT




- Machine at rest
- Cord plugged in
Enter 357357357.. ..set repeat to on position
Make several cycles of addition
The printing is properly "on feet"
yes
FFG
no
Remove ribbon and adjust height of print comb by loosening the screws indicated by arrows
Tighten screws Reinstall ribbon
FFG

MC26 - PRINT SLIDERS GUIDE COMB 449018H ADJUSTMENT




Cord plugged in

Enter 357357..

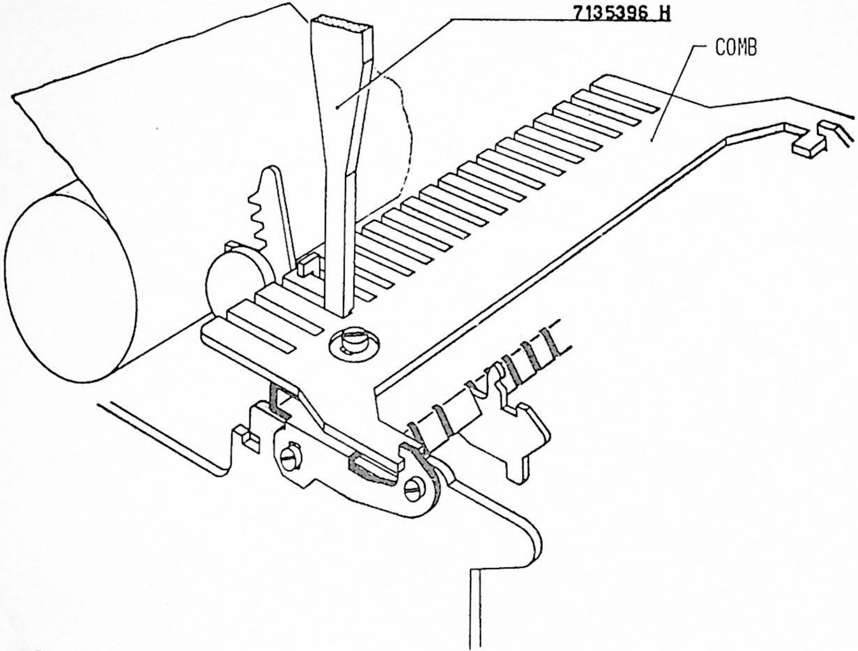
Make several cycles of addition

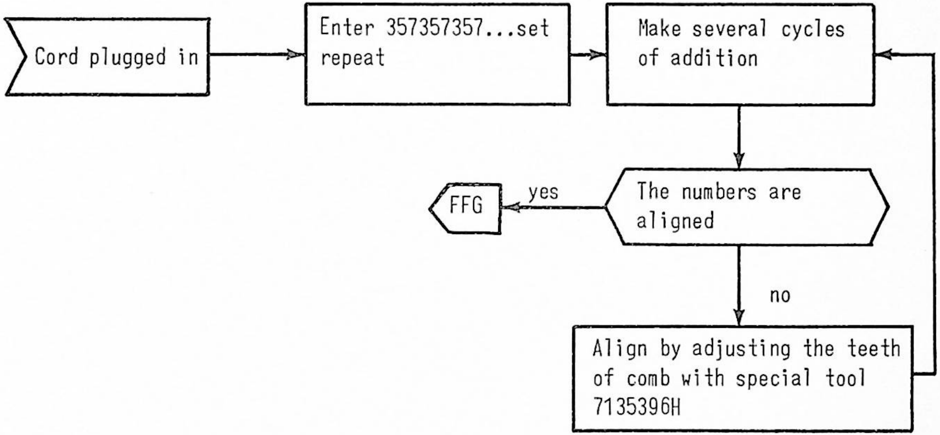
The impression is uniform

Remove ribbon and adjust height of print comb 449018H by loosening the screws indicated by arrows (starting a cycle will make front screws accessible)

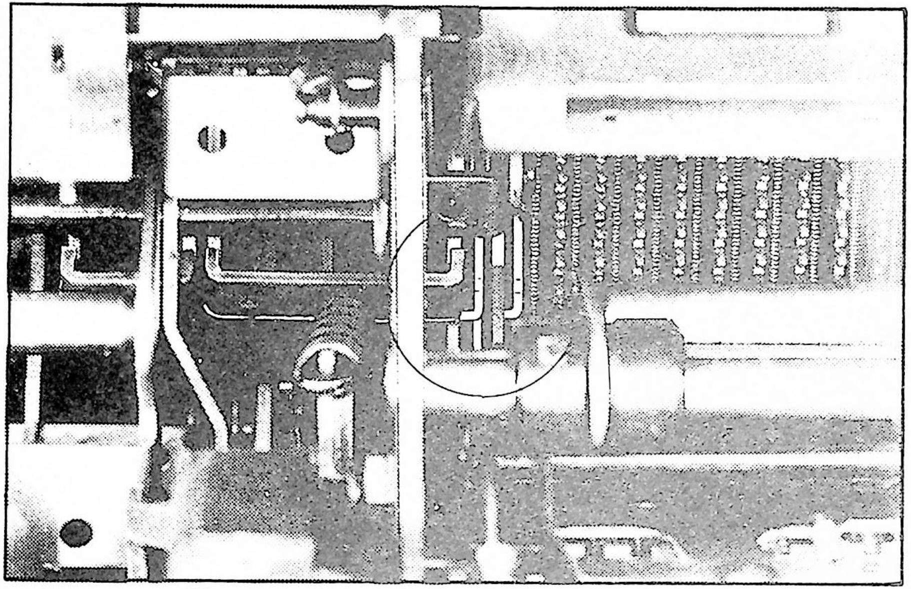
- Tighten screws
- Reinstall ribbon

MC24 - COMB 447120W TEETH ADJUSTMENT




Cord plugged in
Enter 357357357...set repeat
Make several cycles of addition
The numbers are aligned
yes
FFG
no
Align by adjusting the teeth of comb with special tool 7135396H

SYMBOL BRIDGES 447097P AND 447096N ANGULAR POSITION ADJUSTMENT



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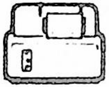
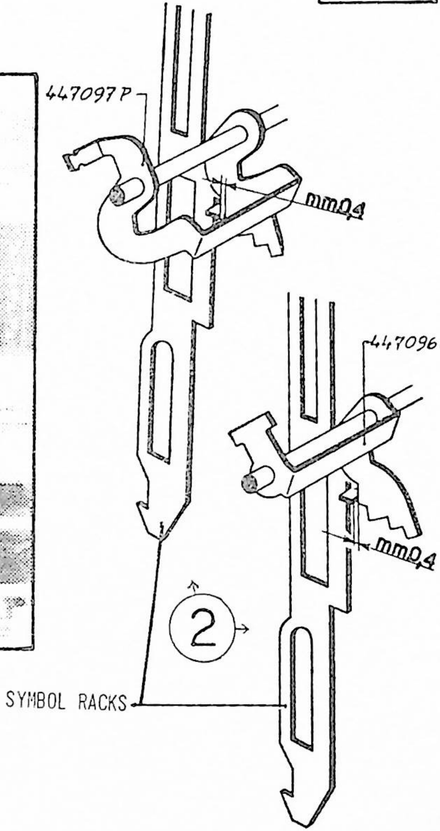




Input all 9's in the memory

- Machine at rest
- Cord unplugged

- Enter 1
- Depress the (NA) key

Rotate knob until the print trip occurs

Use screwdriver and check the clearance between bridges 447097P and 447096N and wings of the symbol racks (fig. 1 & 2)

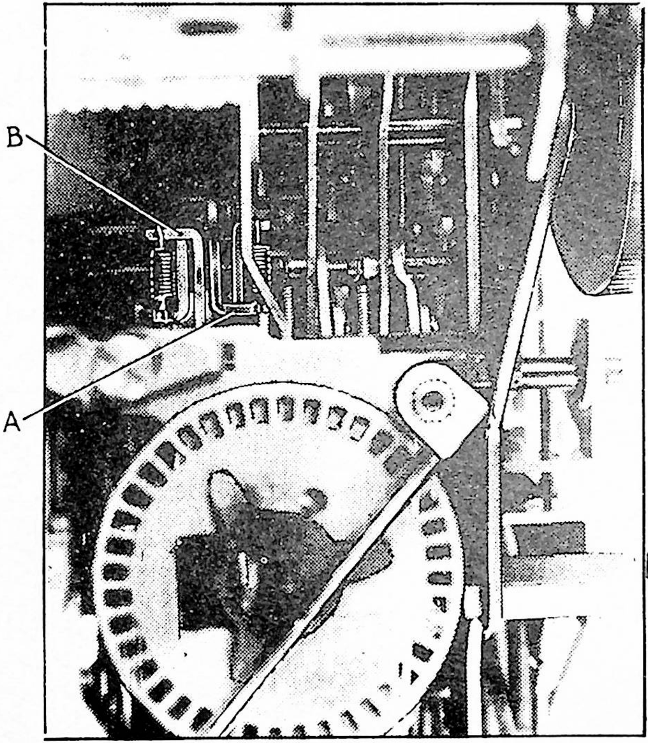
The clearance of 0.4 mm exists for both bridges (fig. 2)

yes → FFG

no

Complete cycle

Form wings A and B (fig. 3). (Wing A for clearance relative to outside rack and wing B for the inside rack)



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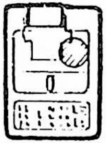
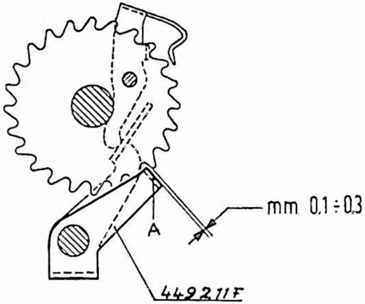


MC26 - BRIDGE 449211F ADJUSTMENT



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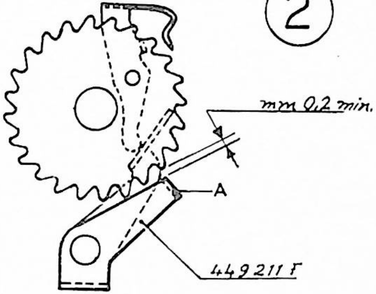

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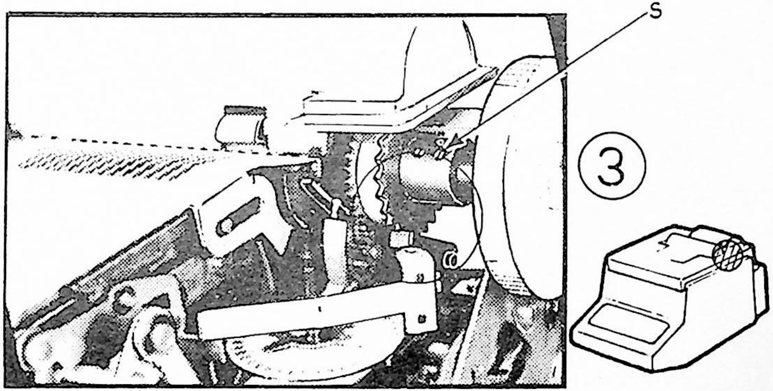

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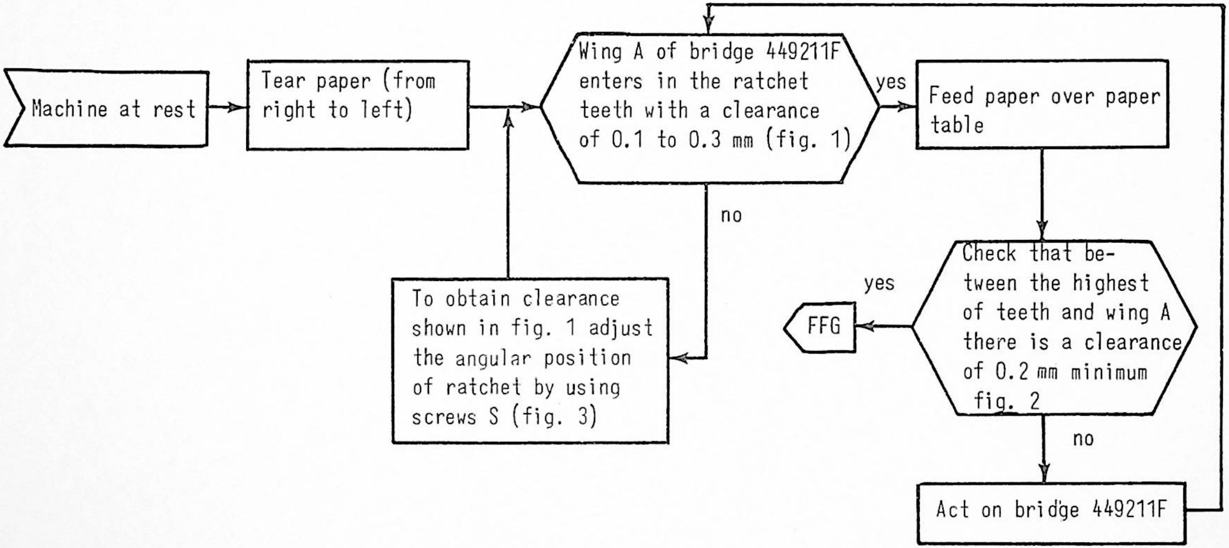
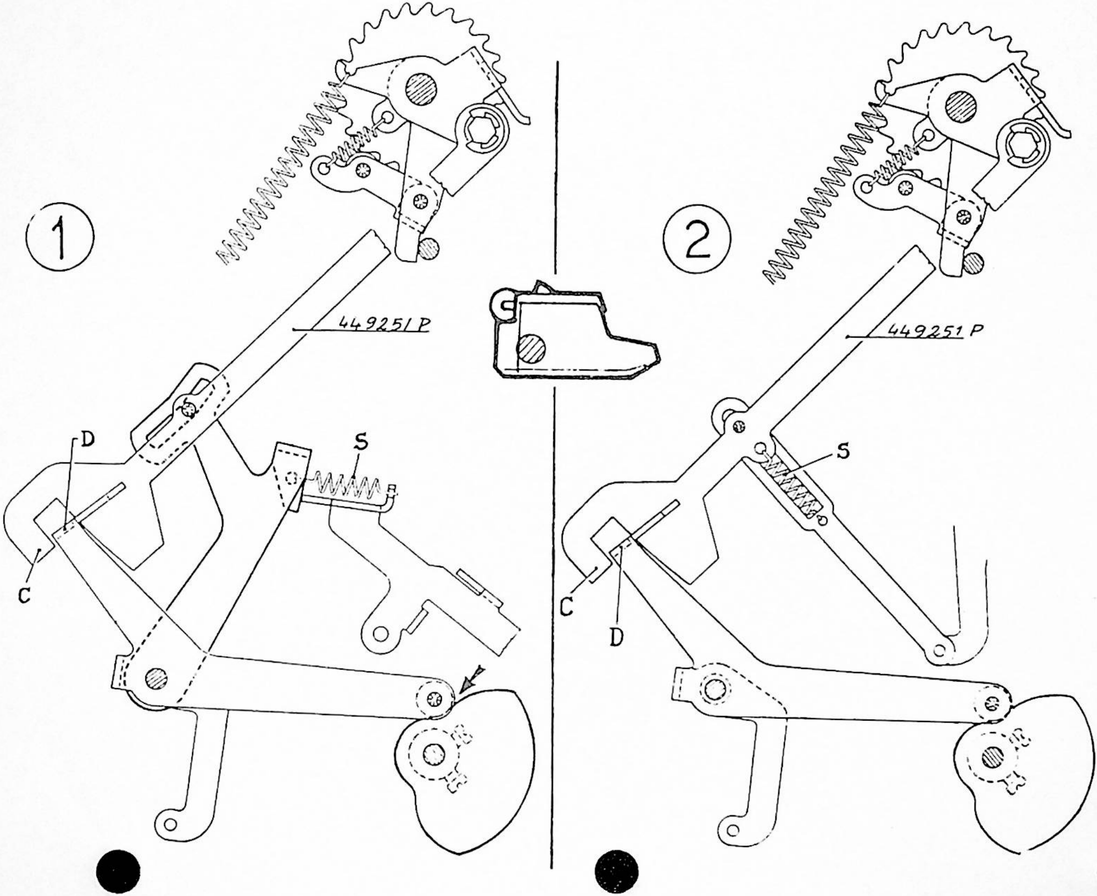
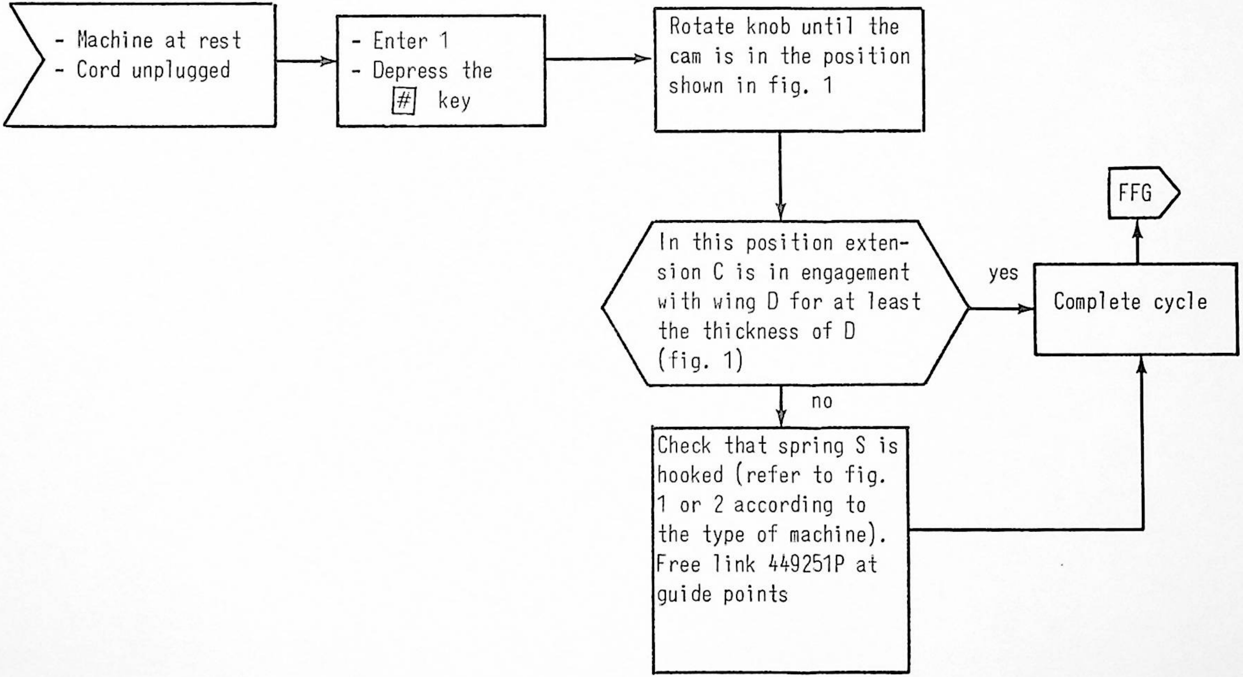
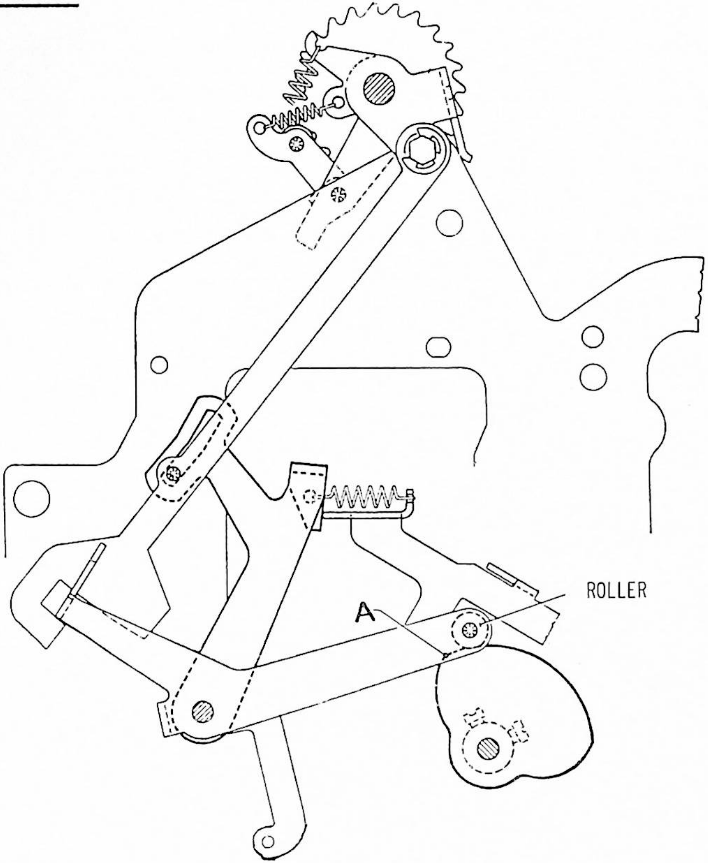

Machine at rest
Tear paper (from right to left)
Wing A of bridge 449211F enters in the ratchet teeth with a clearance of 0.1 to 0.3 mm (fig. 1)
yes
Feed paper over paper table
no
To obtain clearance shown in fig. 1 adjust the angular position of ratchet by using screws S (fig. 3)
Check that between the highest of teeth and wing A there is a clearance of 0.2 mm minimum fig. 2
yes
FFG
no
Act on bridge 449211F

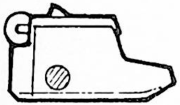
MC26 - HOLD OF LINK 449251P ON WING D ADJUSTMENT

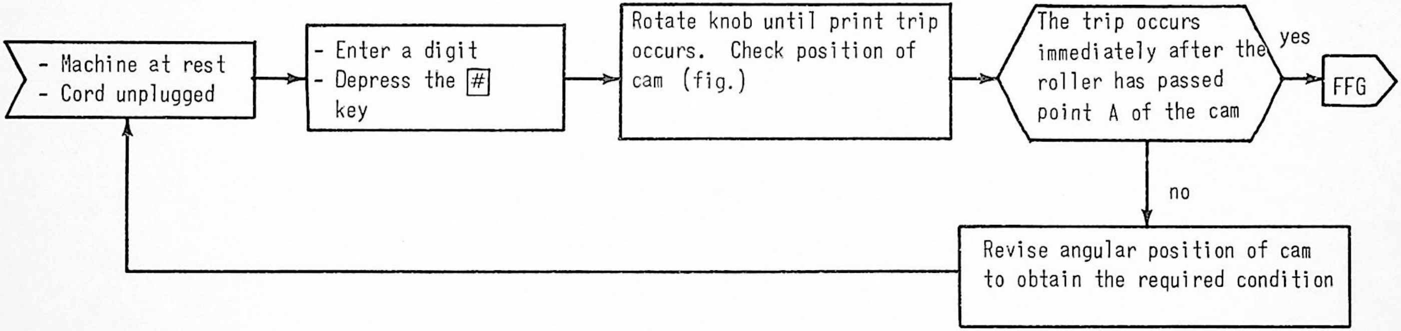



- Machine at rest
- Cord unplugged
- Enter 1
- Depress the # key
Rotate knob until the cam is in the position shown in fig. 1
In this position extension C is in engagement with wing D for at least the thickness of D (fig. 1)
yes
Complete cycle
FFG
no
Check that spring S is hooked (refer to fig. 1 or 2 according to the type of machine). Free link 449251P at guide points

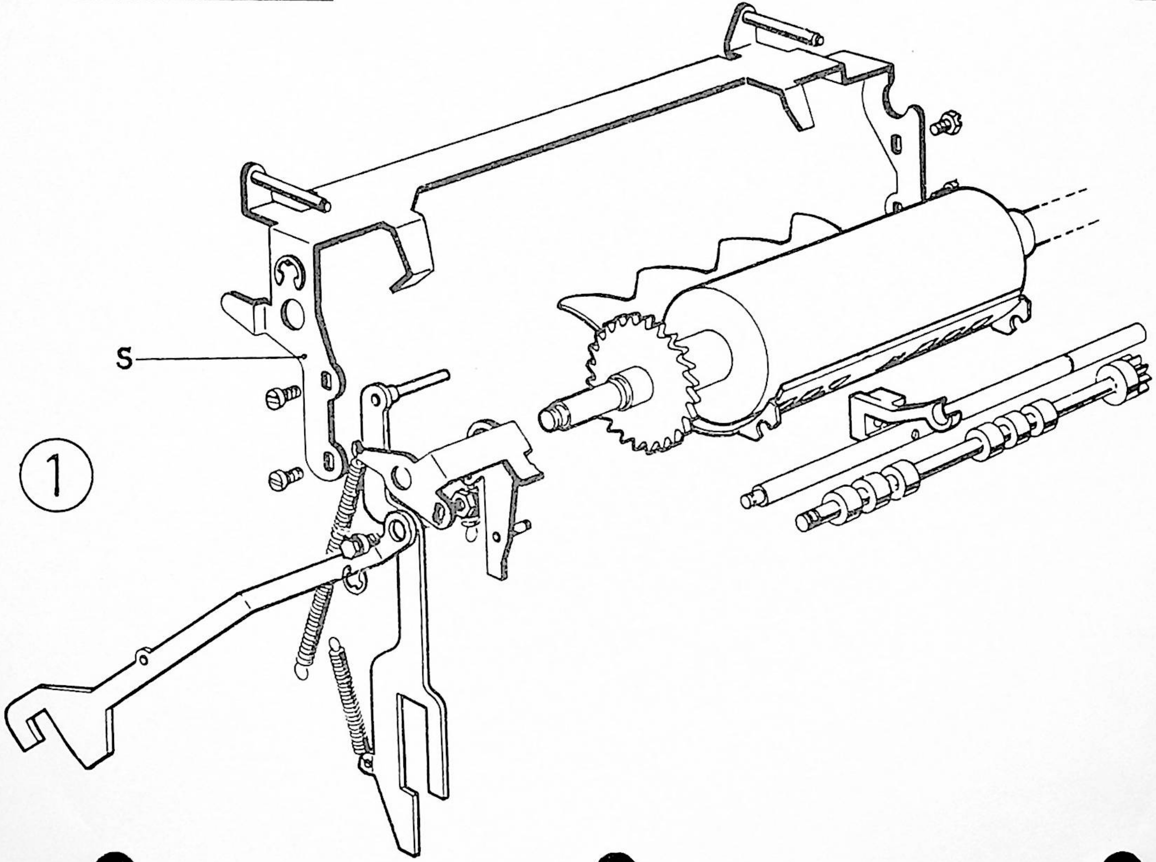
MC26 - LINE SPACE CAM TIMING






- Machine at rest
- Cord unplugged
- Enter a digit
- Depress the # key
Rotate knob until print trip occurs. Check position of cam (fig.)
The trip occurs immediately after the roller has passed point A of the cam
yes
FFG
no
Revise angular position of cam to obtain the required condition

MC26 - PLATEN HEIGHT ADJUSTMENT



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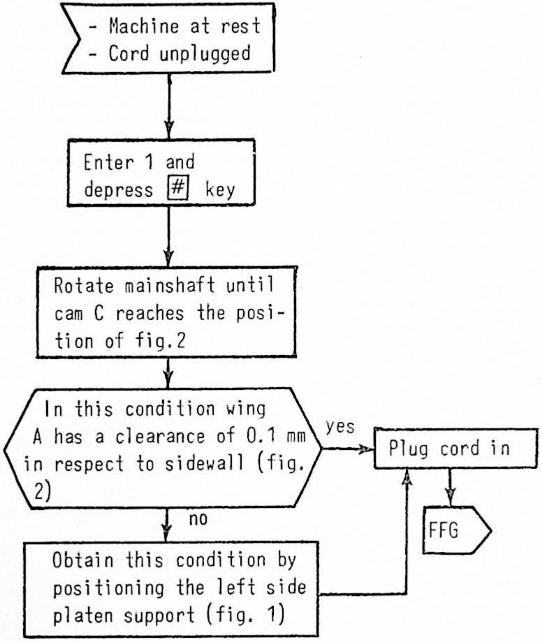


- Machine at rest
- Cord unplugged

Enter 1 and depress # key

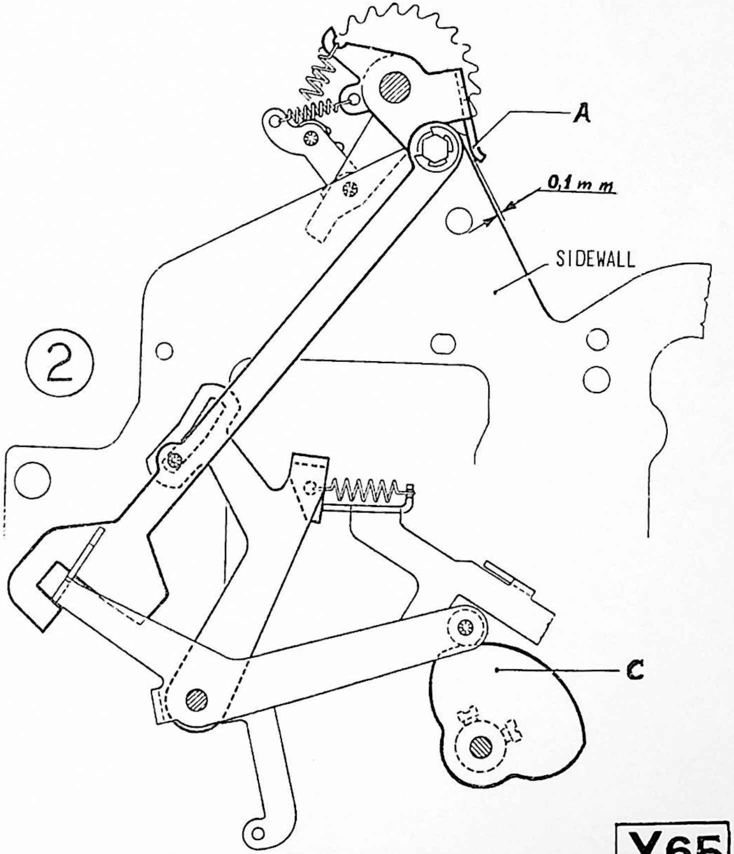
Rotate mainshaft until cam C reaches the position of fig.2

In this condition wing A has a clearance of 0.1 mm in respect to sidewall (fig. 2)

Plug cord in

FFG

Obtain this condition by positioning the left side platen support (fig. 1)



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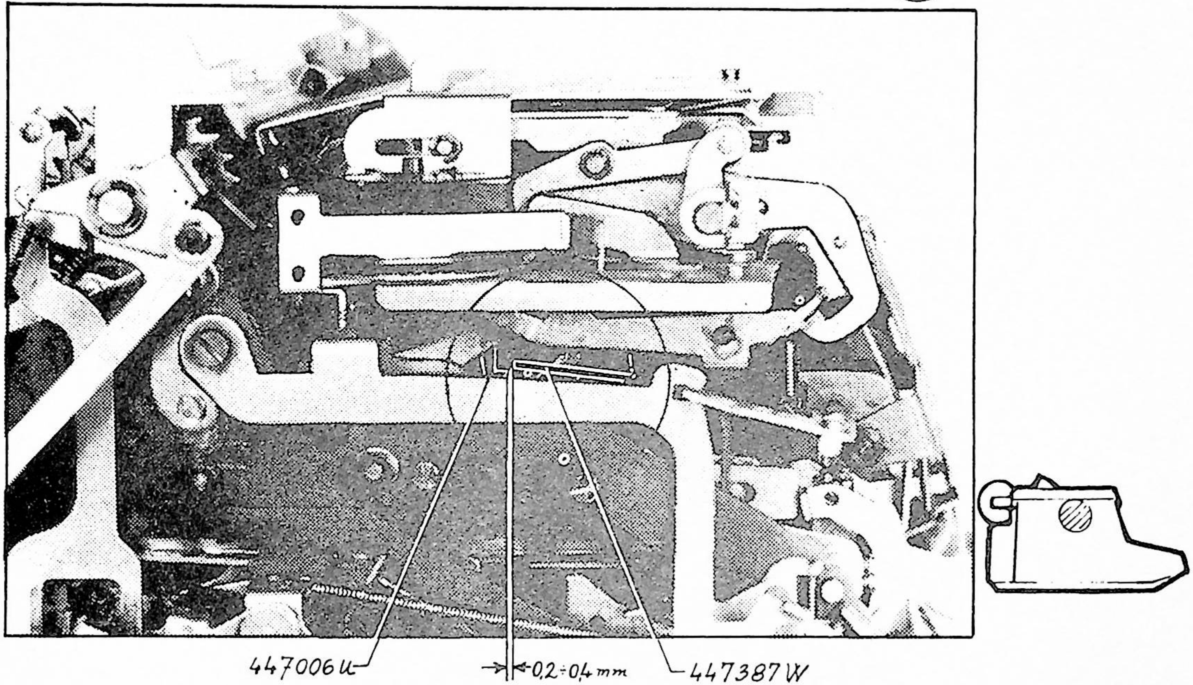
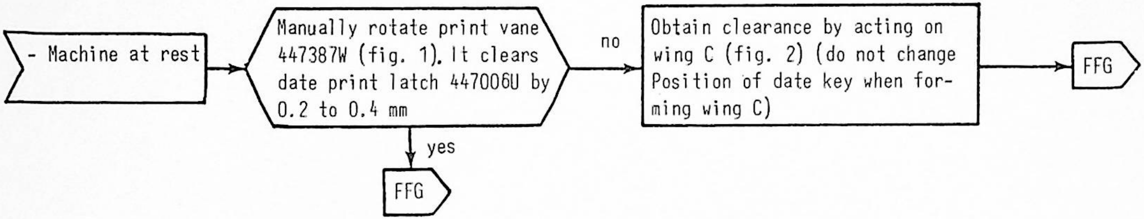




- Machine at rest

Manually rotate print vane 447387W (fig. 1). It clears date print latch 447006U by 0.2 to 0.4 mm

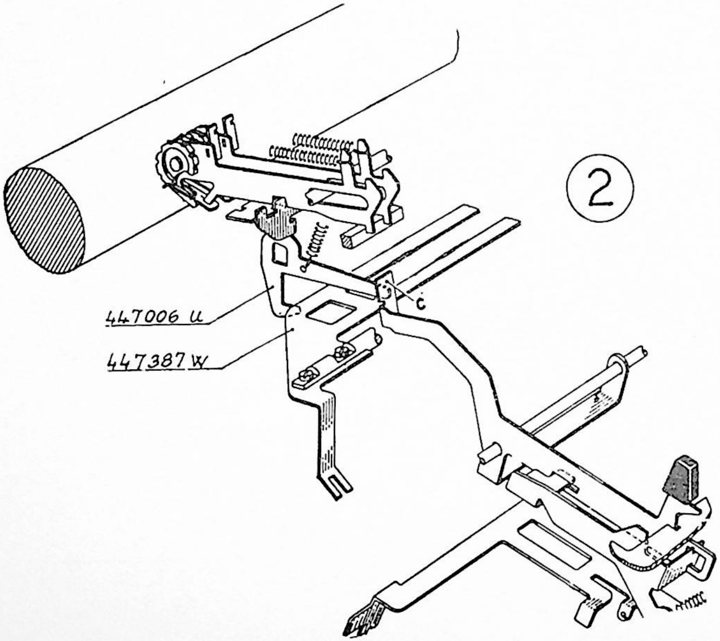
no

Obtain clearance by acting on wing C (fig. 2) (do not change Position of date key when forming wing C)

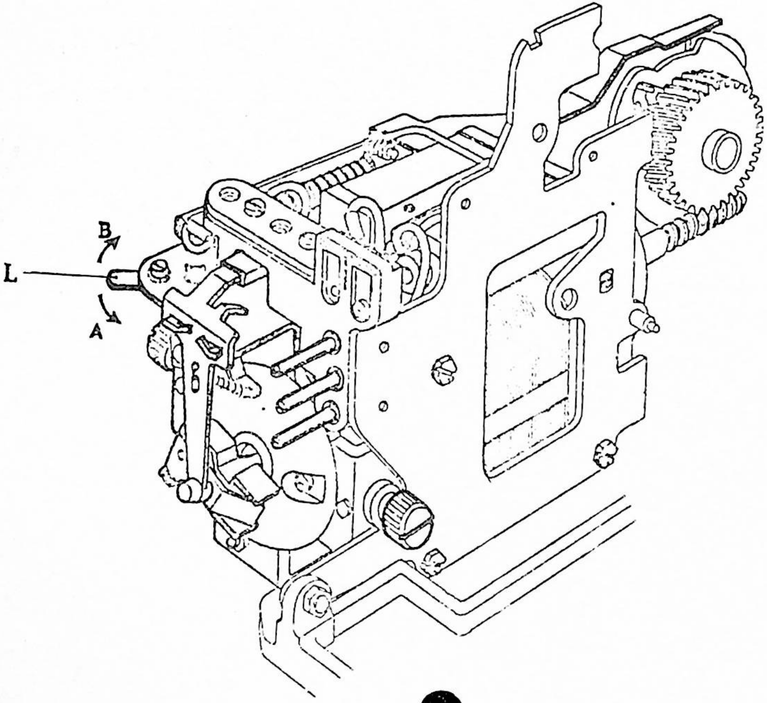
FFG

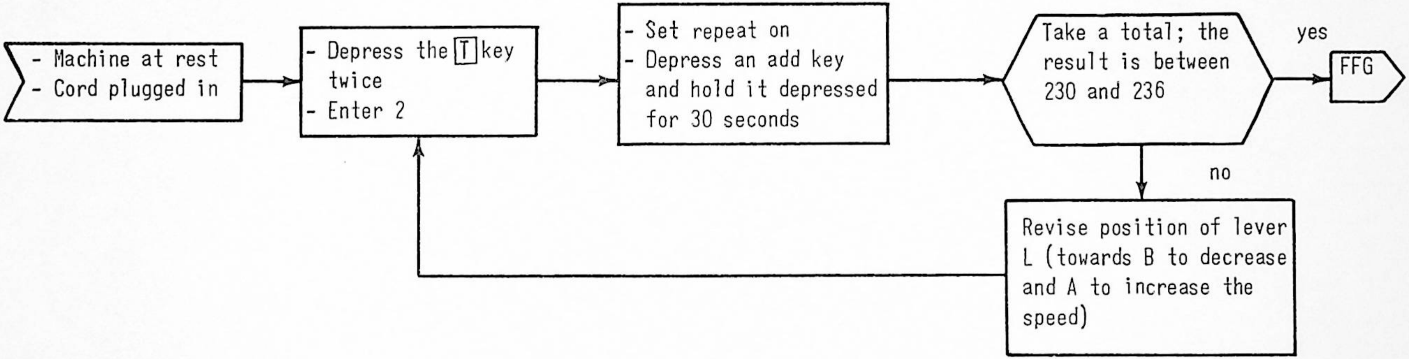
yes

FFG



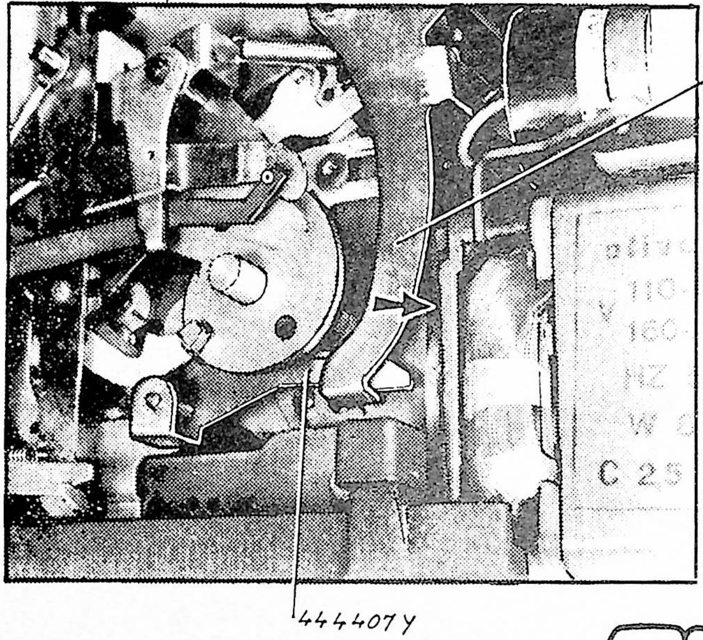
MC24 - BRUSH TYPE MOTOR SPEED ADJUSTMENT




- Machine at rest
- Cord plugged in
- Depress the T key twice
- Enter 2
- Set repeat on
- Depress an add key and hold it depressed for 30 seconds
Take a total; the result is between 230 and 236
yes
FFG
no
Revise position of lever L (towards B to decrease and A to increase the speed)

DISPLACEMENT OF THE PRECYCLE PLATE 444105Z ADJUSTMENT

①



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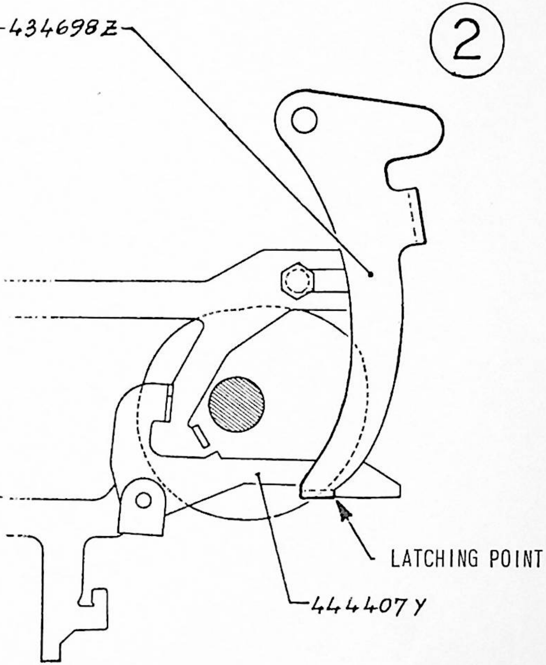
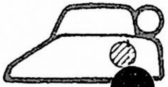
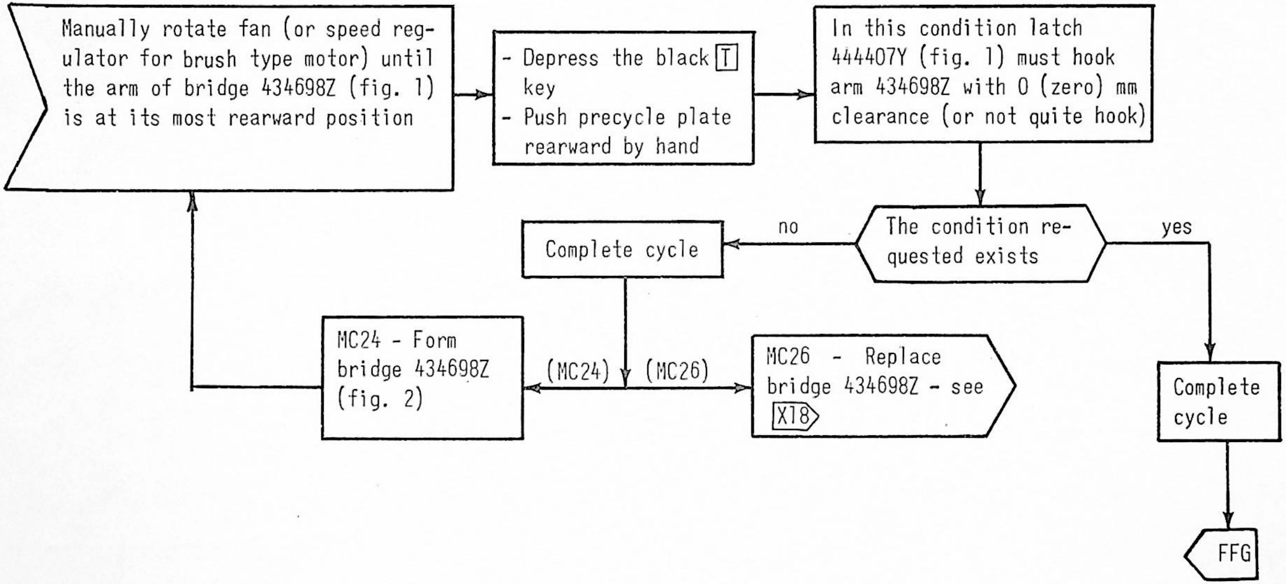
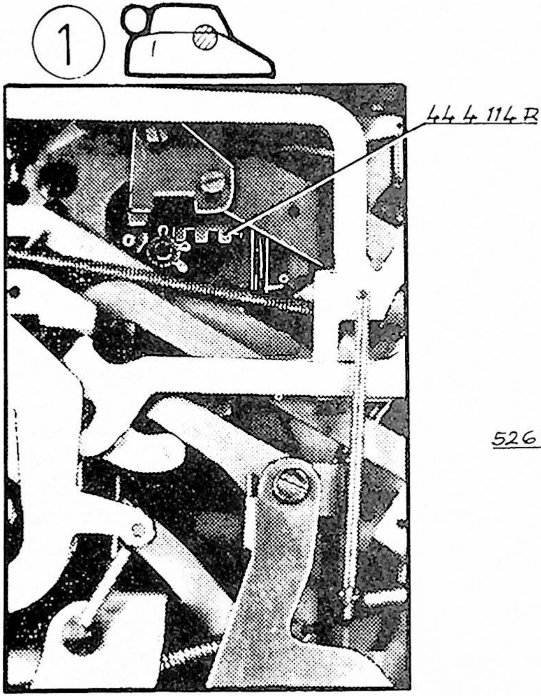


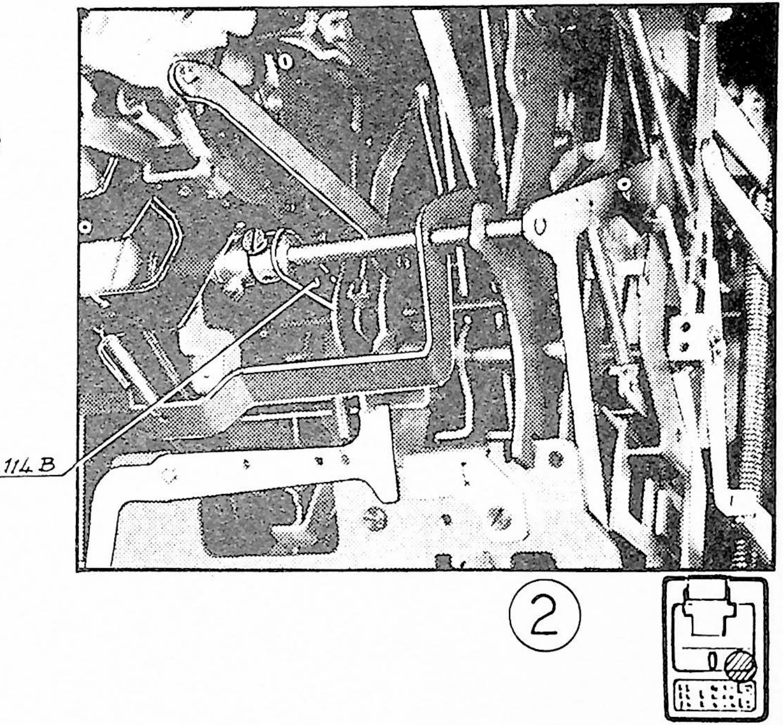



Manually rotate fan (or speed regulator for brush type motor) until the arm of bridge 434698Z (fig. 1) is at its most rearward position
- Depress the black T key
- Push precycle plate rearward by hand
In this condition latch 444407Y (fig. 1) must hook arm 434698Z with 0 (zero) mm clearance (or not quite hook)
The condition requested exists
no
yes
Complete cycle
Complete cycle
(MC24)
(MC26)
MC24 - Form bridge 434698Z (fig. 2)
MC26 - Replace bridge 434698Z - see X18
FFG

MC24 - ANGULAR POSITION OF CRANK 526114B ADJUSTMENT

①





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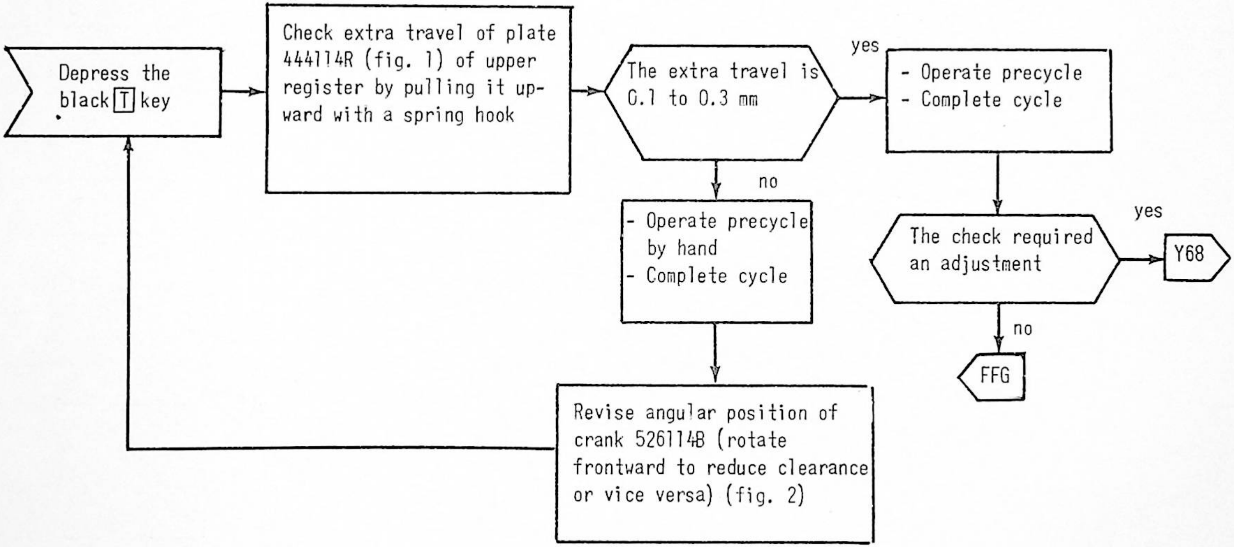

Depress the black T key
Check extra travel of plate 444114R (fig. 1) of upper register by pulling it upward with a spring hook
The extra travel is 0.1 to 0.3 mm
yes
- Operate precycle
- Complete cycle
no
- Operate precycle by hand
- Complete cycle
Revise angular position of crank 526114B (rotate frontward to reduce clearance or vice versa) (fig. 2)
The check required an adjustment
yes
Y68
no
FFG

MC26 - SECOND MEMORY CLEARING BAR ADJUSTMENT

Hold crank 449126S (fig. 1) rotated in the direction shown by the arrow

↓

- Depress the $\boxed{T}$ key
- Operate precycle then make one cycle

↓

Enter twelve 7's
Depress the $\boxed{\overset{+}{D}}$ bar and make one cycle

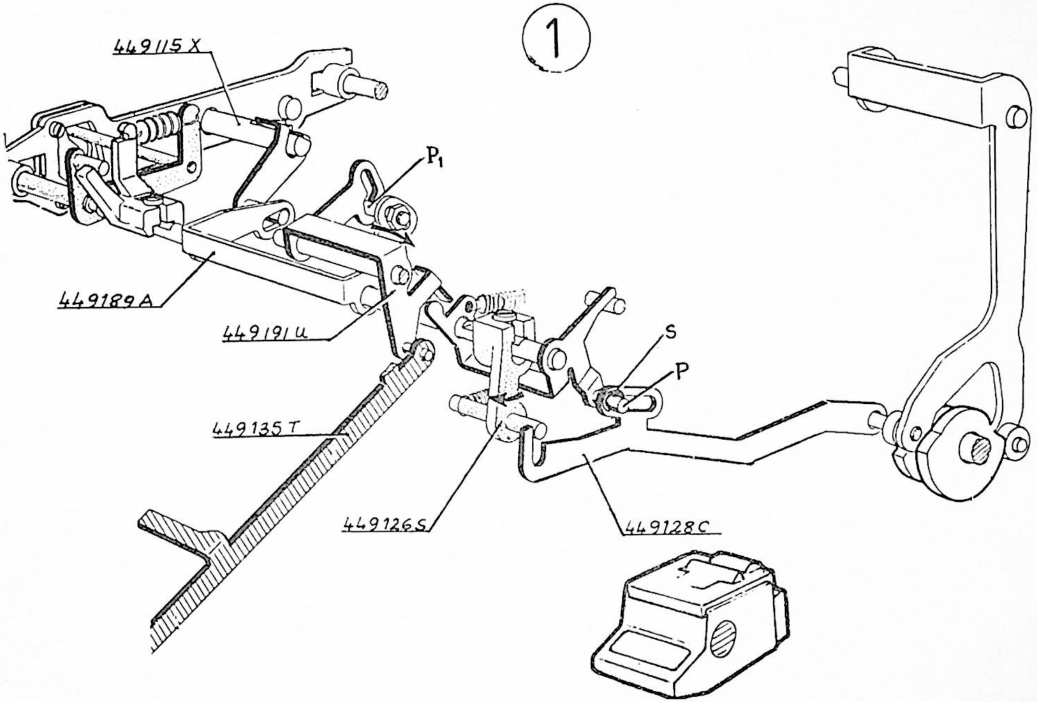
↓

Rotate crank 449126S opposite the direction shown by arrow

↓

Mount hook 449128C on stud P and ensure that it does not come off during the next three operations

↓



- Depress together the T and S keys
- Operate precycle

Slowly rotate main shaft until the print trips

Remove hook 449128C from stud P

Rotate crank 449126S back and forth and check that some print racks go down 0.1 mm

The print racks move the required amounts

yes

Complete cycle

Mount hook 449128C on stud P; fasten with retainer clip S

Check freeness of bridges 449189A, 449191U, pull link 449135T and bar 449115X (fig. 1)

FFG

no

Complete cycle

Stud P1 of bridge 449189A is adjustable (fig. 2)

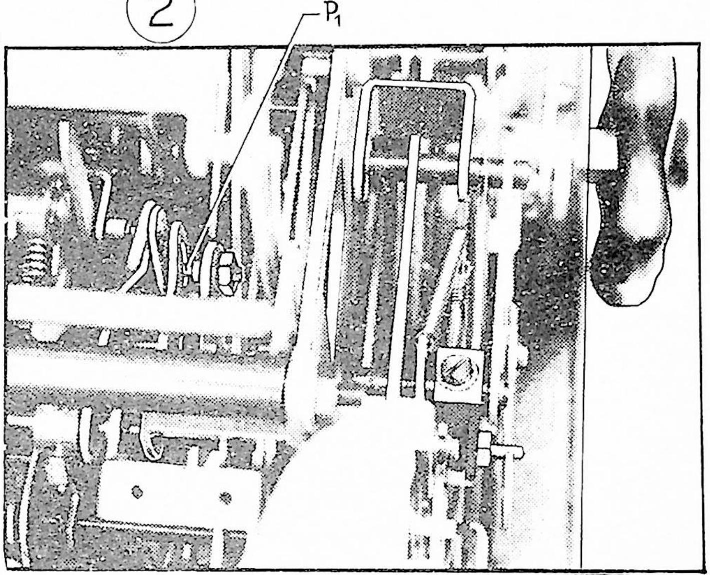
no

Use two screwdrivers and form bridge 449189A; lower left arm to increase displacement of print racks or raise to decrease

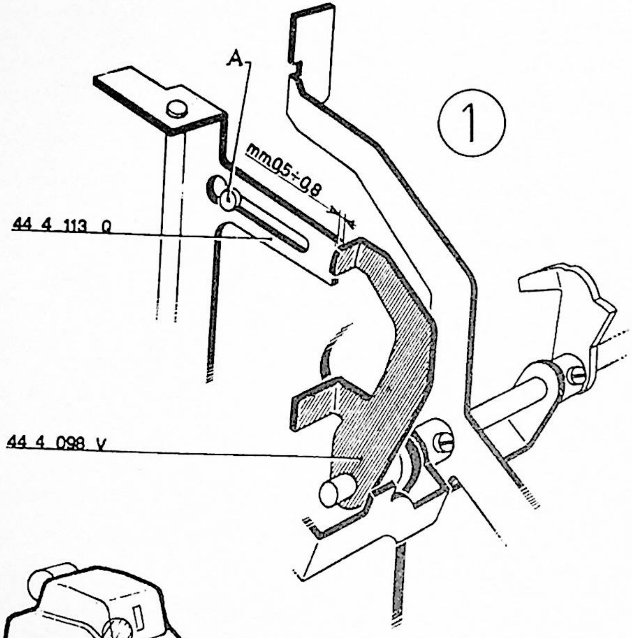
yes

Loosen nut of stud P1 and move bridge 449189A in the direction of arrow (fig. 1 - 2) to increase the displacement of the print racks or opposite arrow to decrease. Tighten stud P1

②



ARM 444098V ANGULAR POSITION ADJUSTMENT



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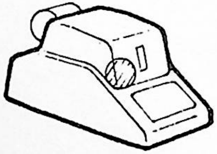

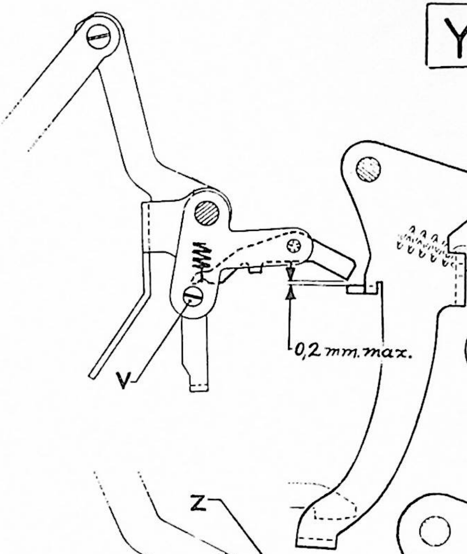

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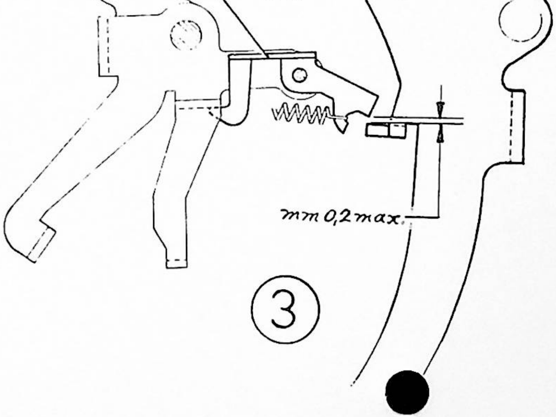

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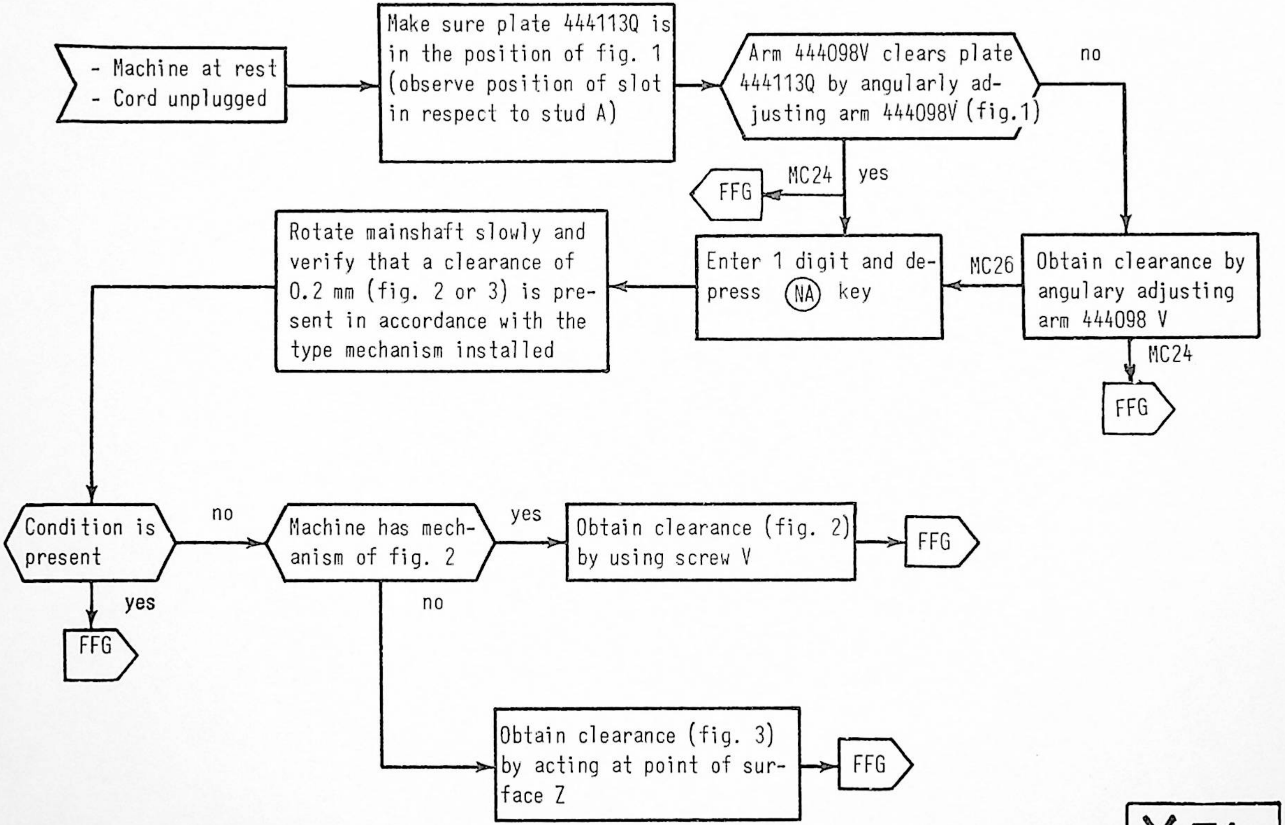
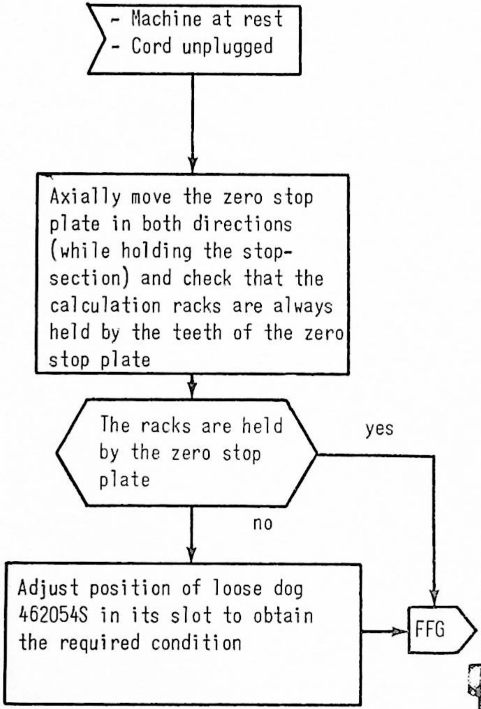

- Machine at rest
- Cord unplugged
Make sure plate 444113Q is in the position of fig. 1 (observe position of slot in respect to stud A)
Arm 444098V clears plate 444113Q by angularly adjusting arm 444098V (fig.1)
no
yes
MC24
FFG
Obtain clearance by angulary adjusting arm 444098 V
MC24
FFG
MC26
Enter 1 digit and depress (NA) key
Rotate mainshaft slowly and verify that a clearance of 0.2 mm (fig. 2 or 3) is present in accordance with the type mechanism installed
Condition is present
yes
FFG
no
Machine has mechanism of fig. 2
yes
Obtain clearance (fig. 2) by using screw V
FFG
no
Obtain clearance (fig. 3) by acting at point of surface Z
FFG

STOP SECTION CENTERING ADJUSTMENT

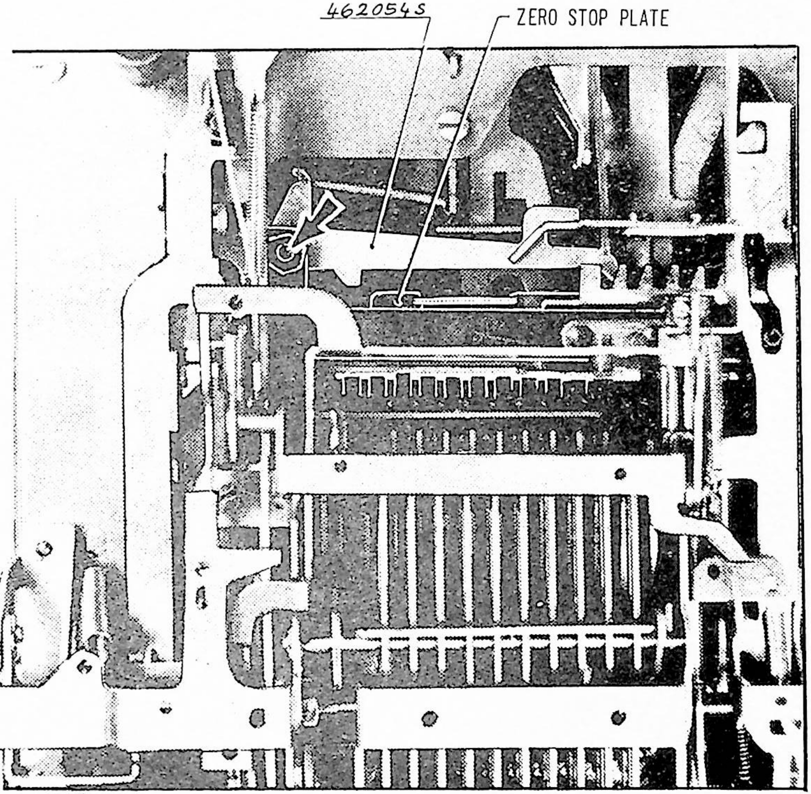


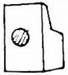
- Machine at rest
- Cord unplugged

Axially move the zero stop plate in both directions (while holding the stop-section) and check that the calculation racks are always held by the teeth of the zero stop plate

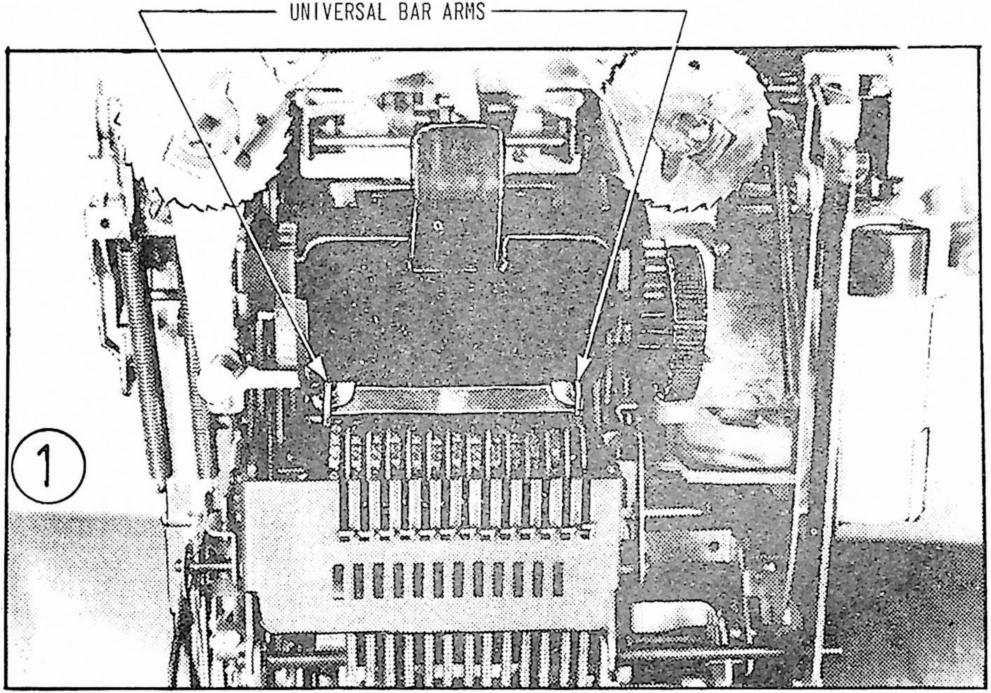
The racks are held by the zero stop plate

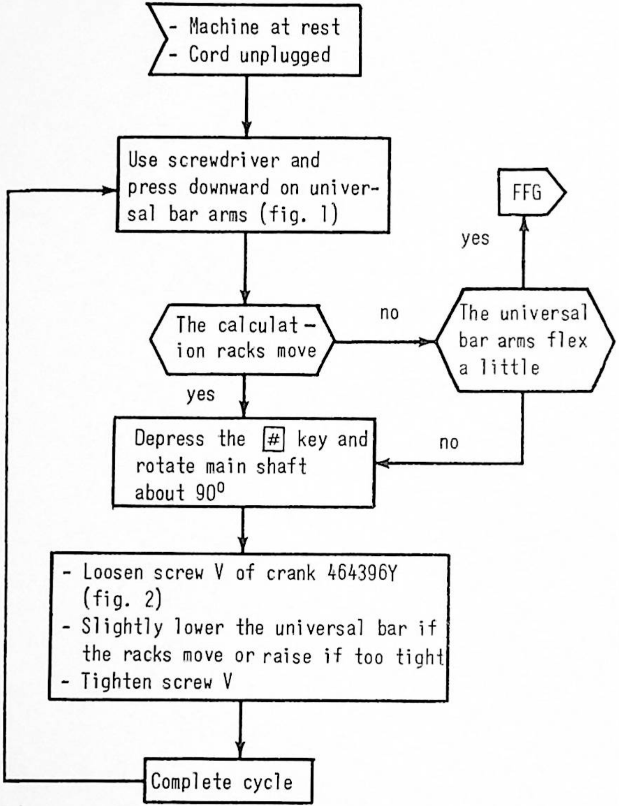
Adjust position of loose dog 462054S in its slot to obtain the required condition





UNIVERSAL BAR ADJUSTMENT





- Machine at rest
- Cord unplugged

Use screwdriver and press downward on universal bar arms (fig. 1)

The calculation racks move

yes

Depress the # key and rotate main shaft about 90°

- Loosen screw V of crank 464396Y (fig. 2)
- Slightly lower the universal bar if the racks move or raise if too tight
- Tighten screw V

Complete cycle

no

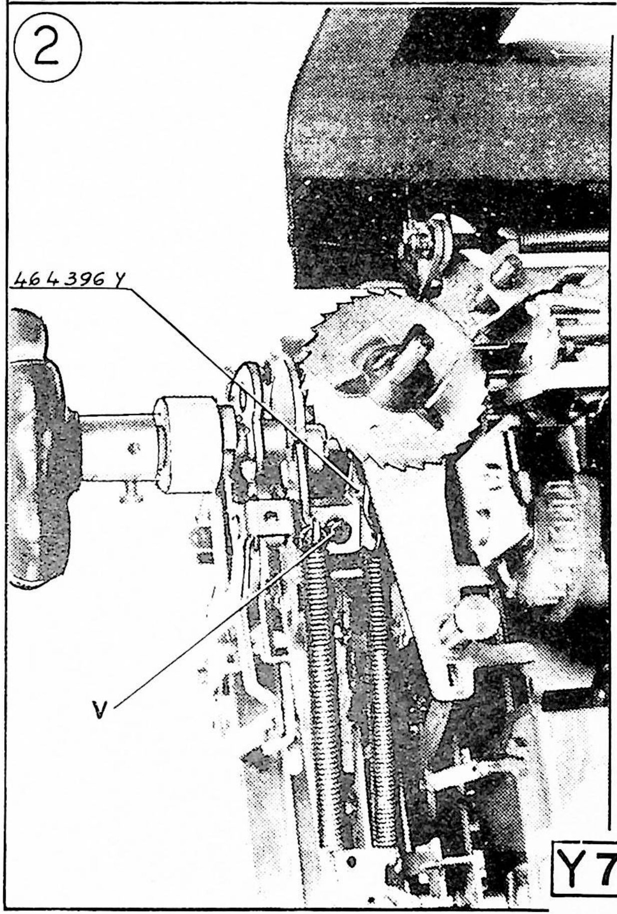
The universal bar arms flex a little

yes

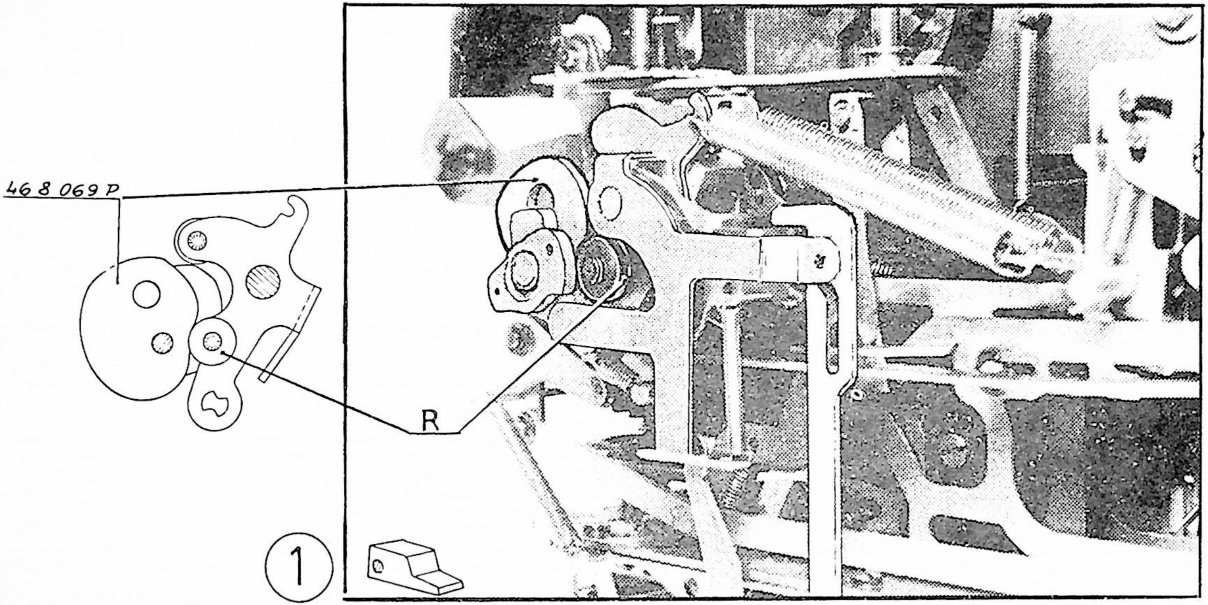
FFG

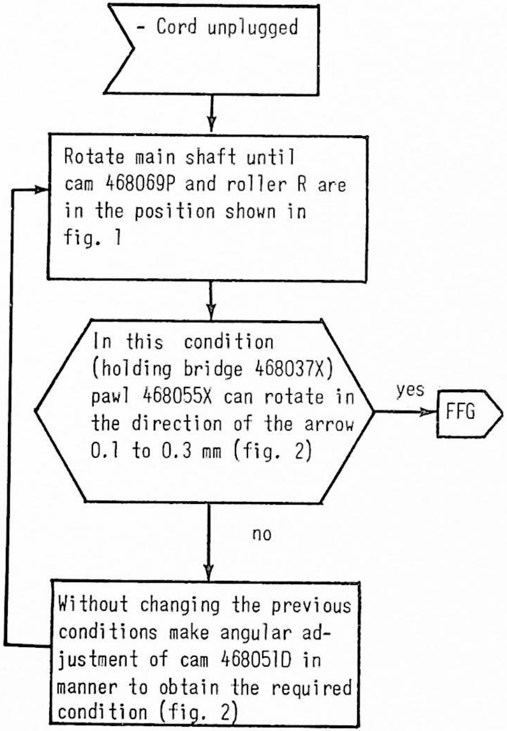
no

②



CAM 468051D ANGULAR POSITION ADJUSTMENT



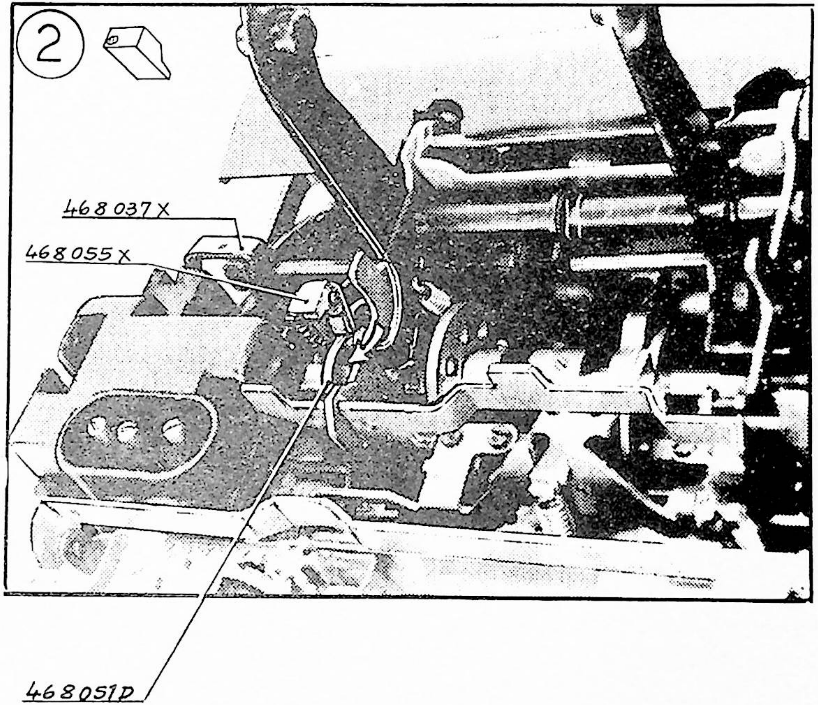


- Cord unplugged

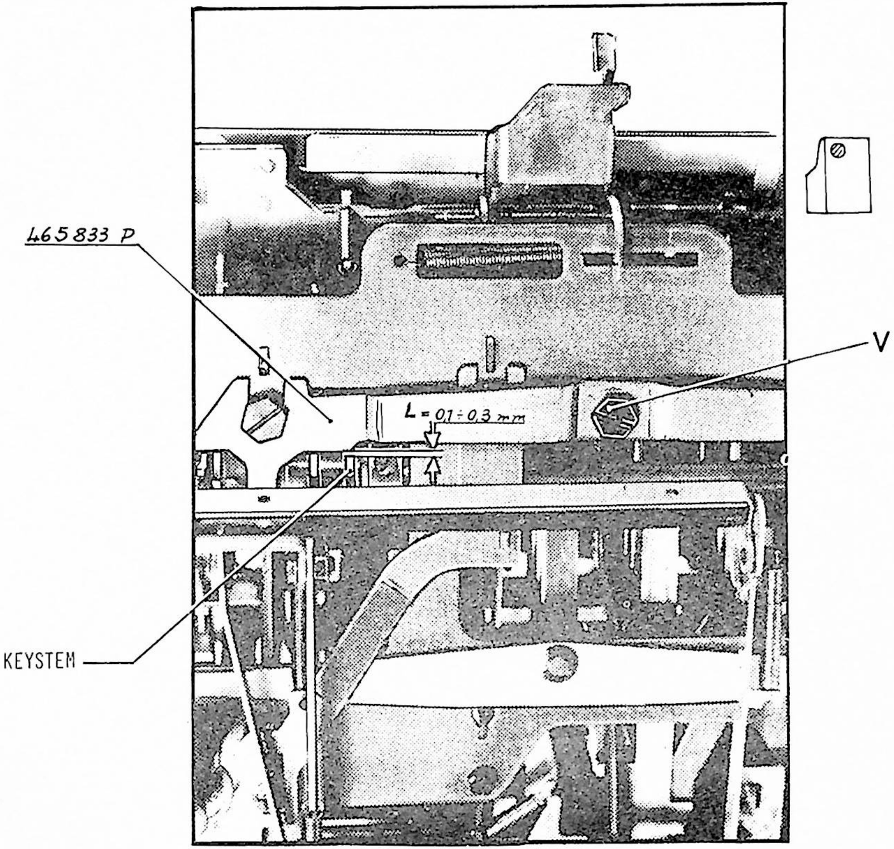
Rotate main shaft until cam 468069P and roller R are in the position shown in fig. 1

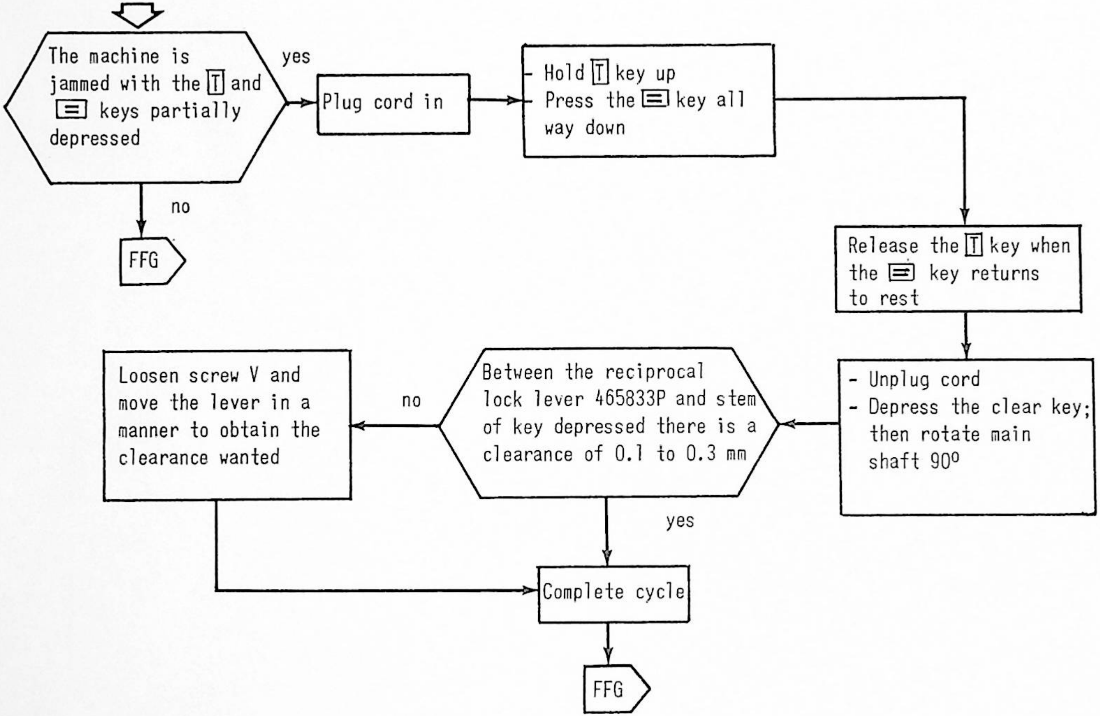
In this condition (holding bridge 468037X) pawl 468055X can rotate in the direction of the arrow 0.1 to 0.3 mm (fig. 2)

Without changing the previous conditions make angular adjustment of cam 468051D in manner to obtain the required condition (fig. 2)

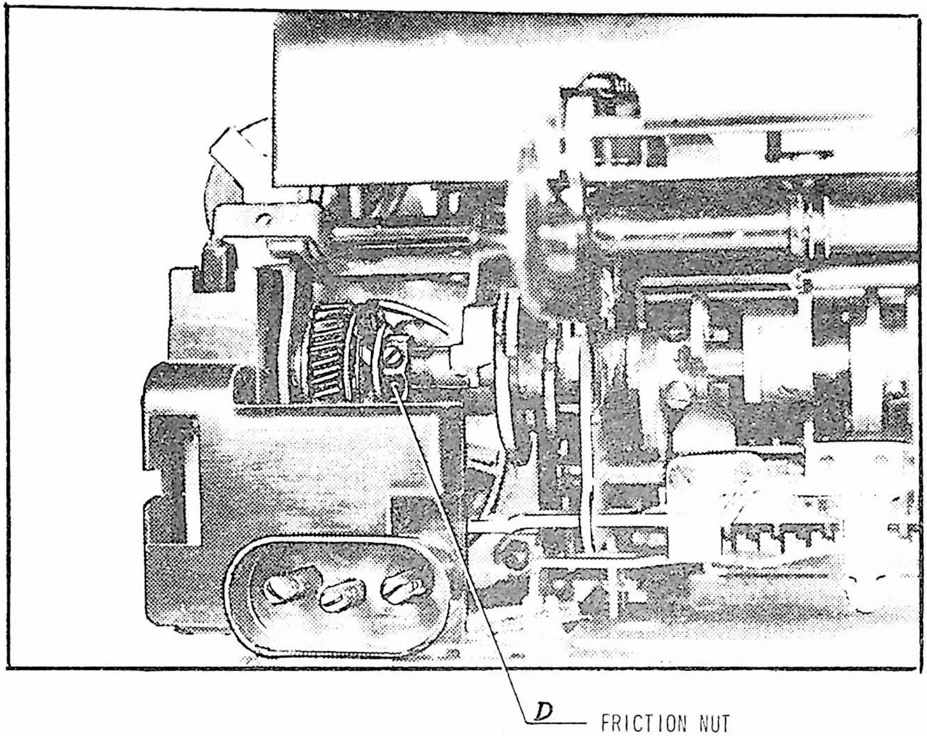


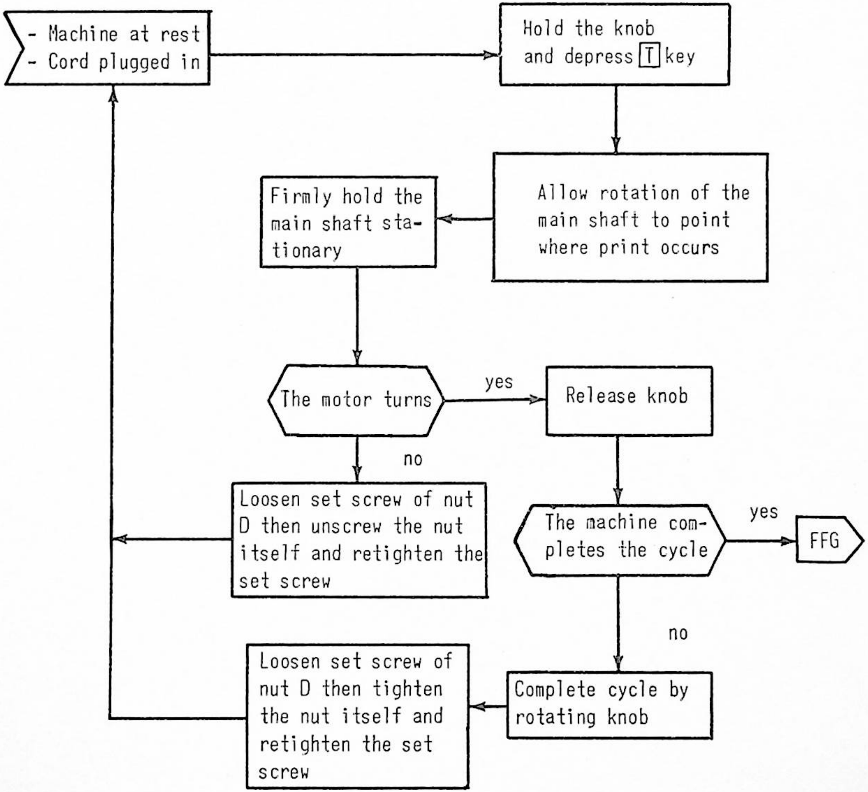
RECIPROCAL LOCK LEVER 465833P ADJUSTMENT




The machine is jammed with the T and ≡ keys partially depressed
yes
no
FFG
Plug cord in
- Hold T key up
- Press the ≡ key all way down
Release the T key when the ≡ key returns to rest
- Unplug cord
- Depress the clear key; then rotate main shaft 90°
Between the reciprocal lock lever 465833P and stem of key depressed there is a clearance of 0.1 to 0.3 mm
no
Loosen screw V and move the lever in a manner to obtain the clearance wanted
yes
Complete cycle
FFG

CLUTCH ADJUSTMENT




- Machine at rest
- Cord plugged in
Hold the knob and depress T key
Allow rotation of the main shaft to point where print occurs
Firmly hold the main shaft stationary
The motor turns
yes
Release knob
no
Loosen set screw of nut D then unscrew the nut itself and retighten the set screw
The machine completes the cycle
yes
FFG
no
Complete cycle by rotating knob
Loosen set screw of nut D then tighten the nut itself and retighten the set screw

SLIDER 468017T ADJUSTMENT

- Machine at rest
- Cord unplugged

Depress the T key and push slider 468017T (fig. 1) frontward

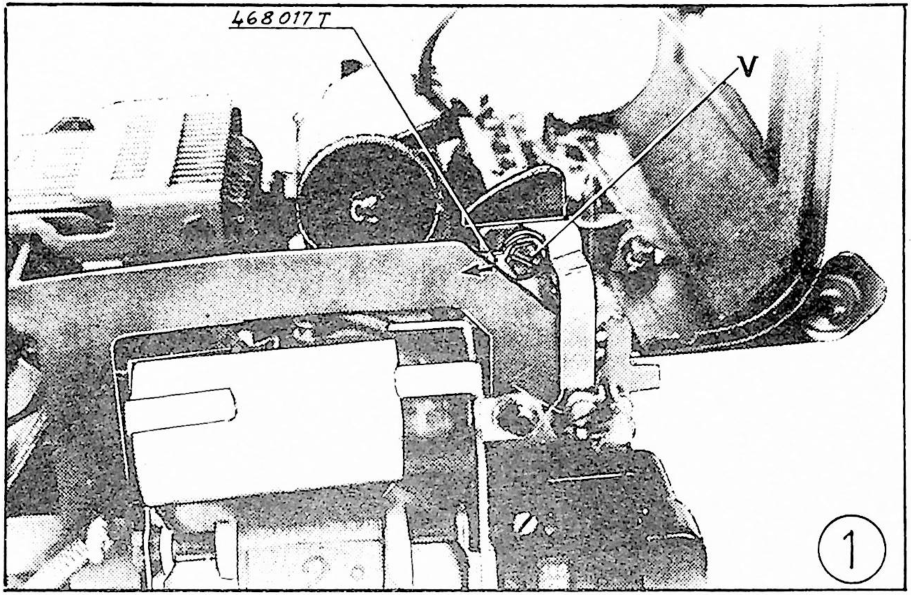
Rotate main shaft 45°

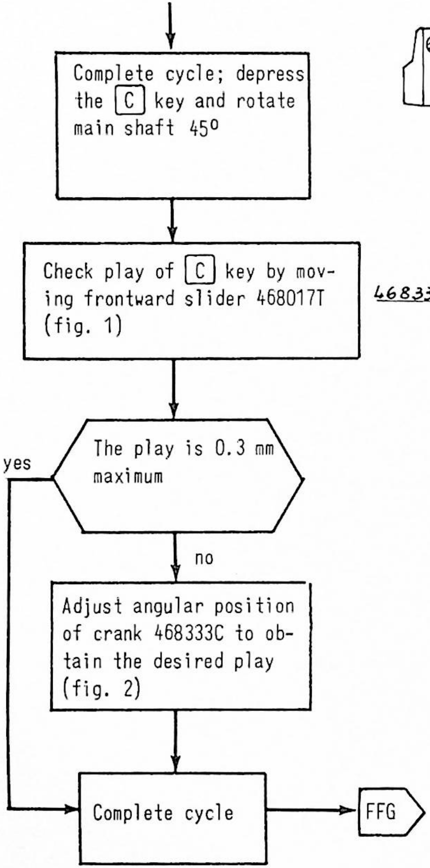
Check play of key by moving slider 468017T (fig. 1) frontward

The play is 0.3 mm maximum

no: Reestablish key clearance by moving screw V in the slot

yes





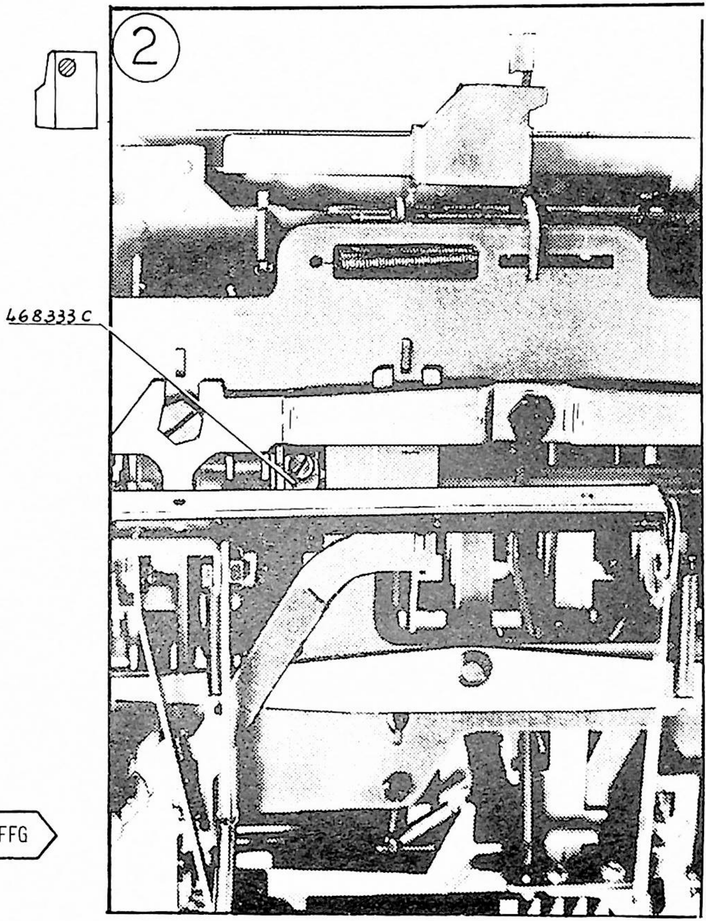
Complete cycle; depress the C key and rotate main shaft 45°

Check play of C key by moving frontward slider 468017T (fig. 1)

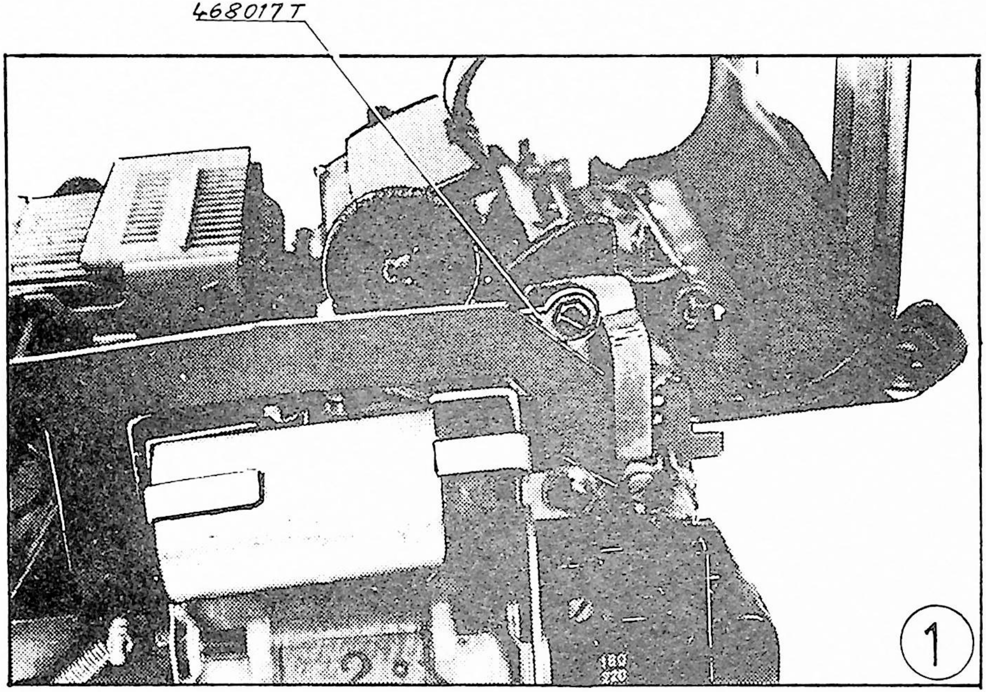
The play is 0.3 mm maximum

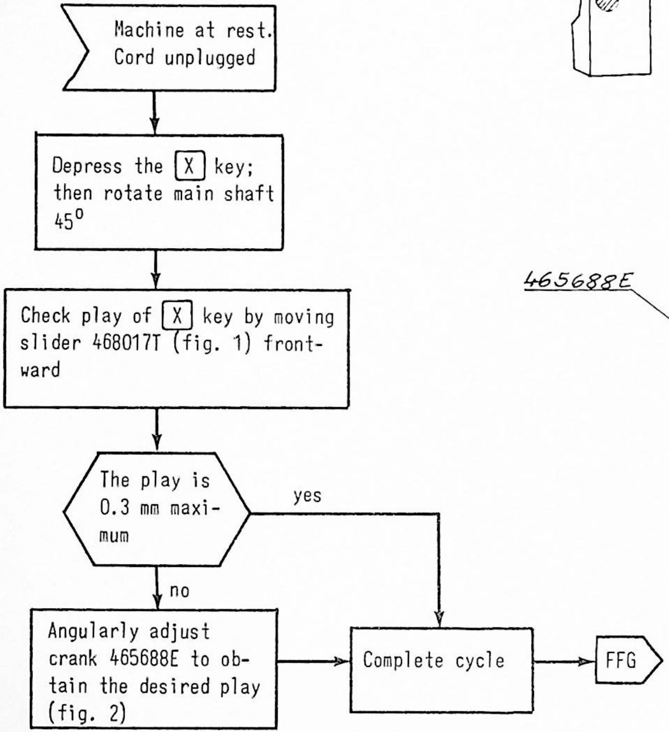
Adjust angular position of crank 468333C to obtain the desired play (fig. 2)

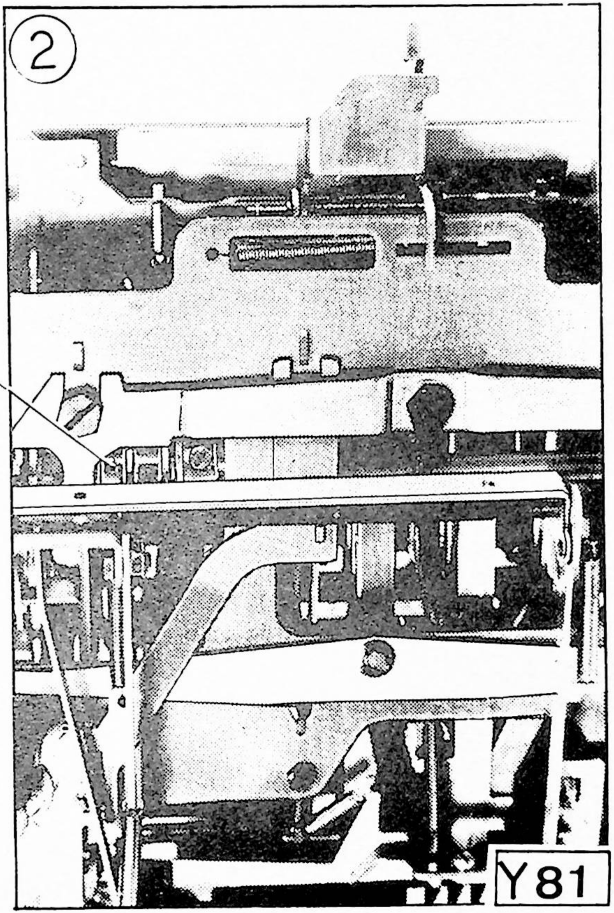
Complete cycle



CRANK 465688E ADJUSTMENT

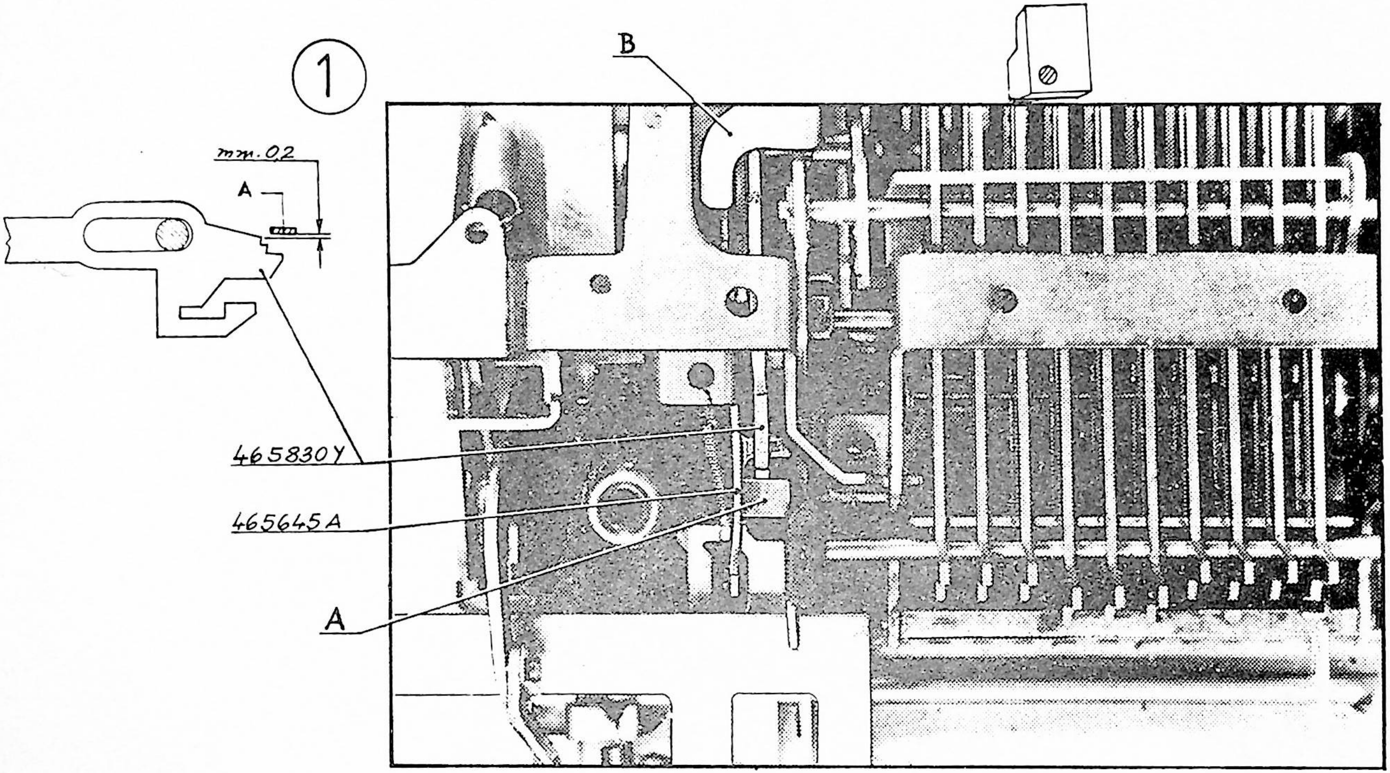



Machine at rest. Cord unplugged
Depress the X key; then rotate main shaft 45°
Check play of X key by moving slider 468017T (fig. 1) frontward
The play is 0.3 mm maximum
yes
no
Angularly adjust crank 465688E to obtain the desired play (fig. 2)
Complete cycle
FFG


②
465688E

MULTIPLICATION LINK LATCH ADJUSTMENT

①



- Plug cord in
- Depress the ⊟ key until the multiplication is completed

Unplug cord

Depress the ⊟ key and hold it depressed

Releasing key, 0.2 mm clearance (fig. 1) is present between wing A of bridge 465645A and slider 465830Y (latching does not take place)

no: Act on wing B

yes: Complete cycle

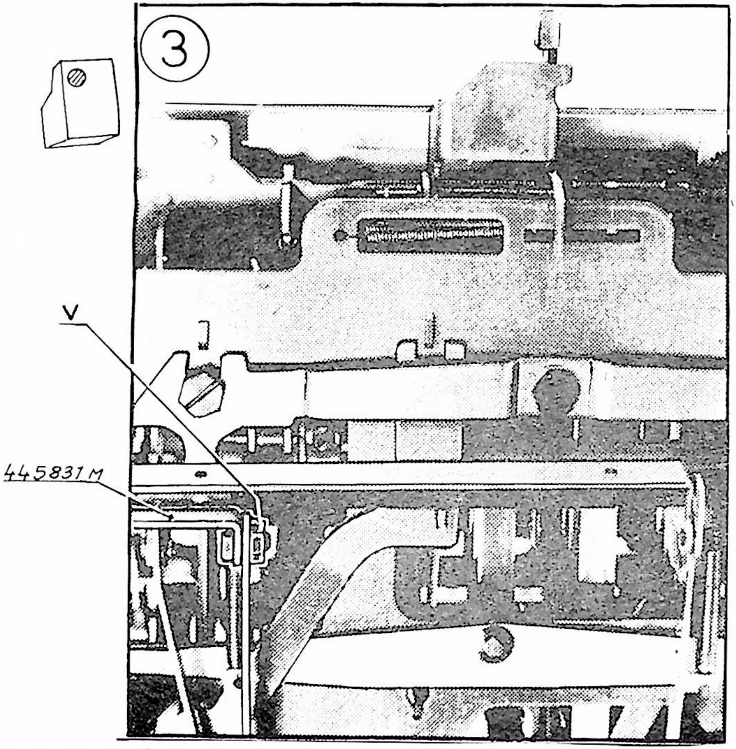
Enter several digits; depress the ⊟ key and hold

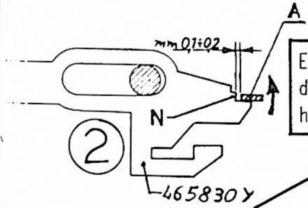
The entrance clearance of wing A into step N is 0.1 to 0.2 mm (fig. 2)

yes: FFG

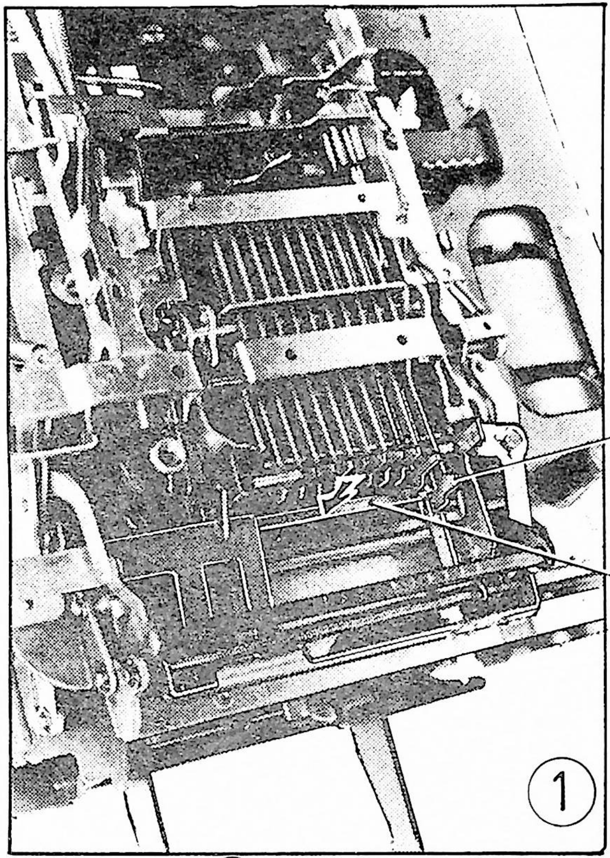
no: Pull wing A (in direction of Arrow) to disengage it from slider 465830Y adjust position of screw V in slot (fig. 3) (if machine has no screw V act on bridge 445831M fig. 3)

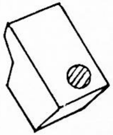
Complete cycle





COUNTER BAIL 465850C REST POSITION ADJUSTMENT





- Machine at rest
- Cord unplugged

Input in memory one "3"

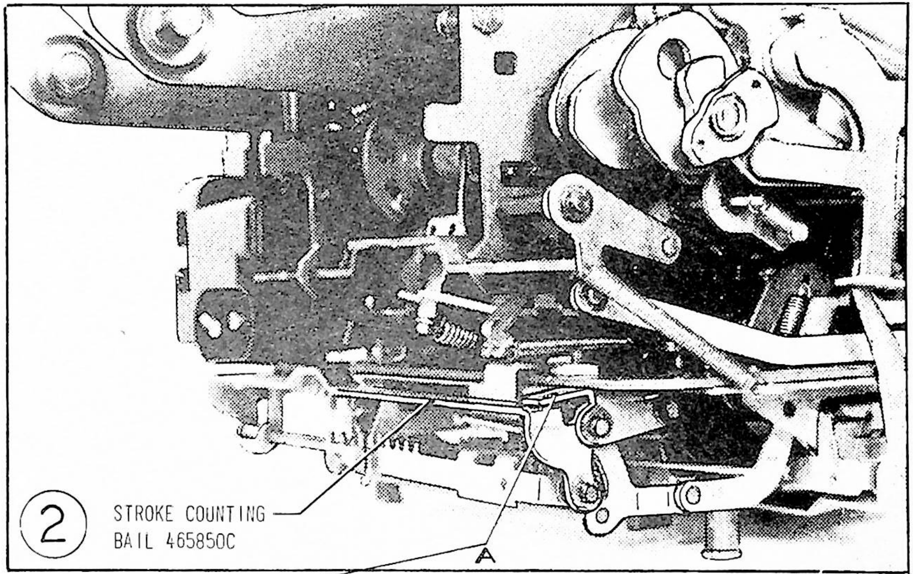
Enter a digit and depress the [=] key

Press on shaft B (fig. 1)

Release shaft and observe that rack K moves 0.4 to 0.6 mm toward rear (fig. 1)

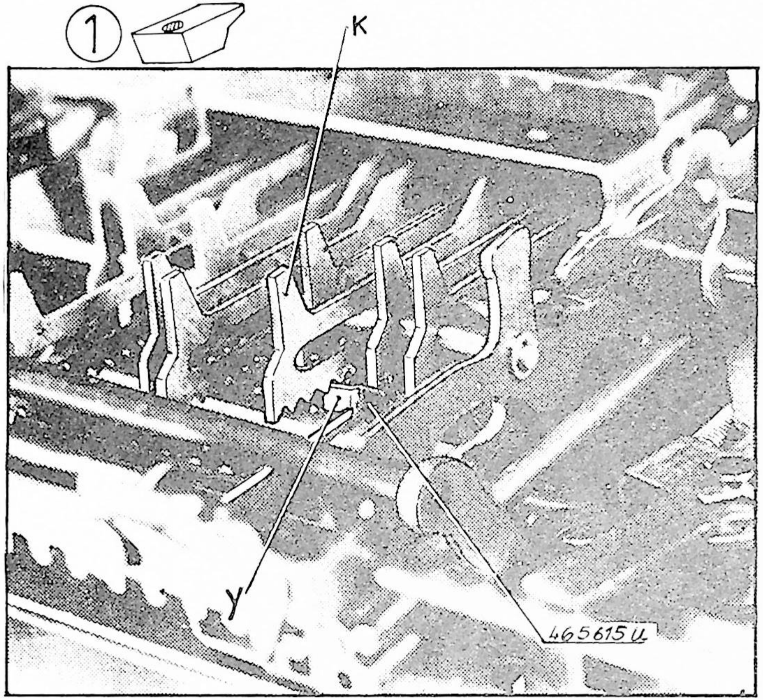
yes → Plug cord in → FFG

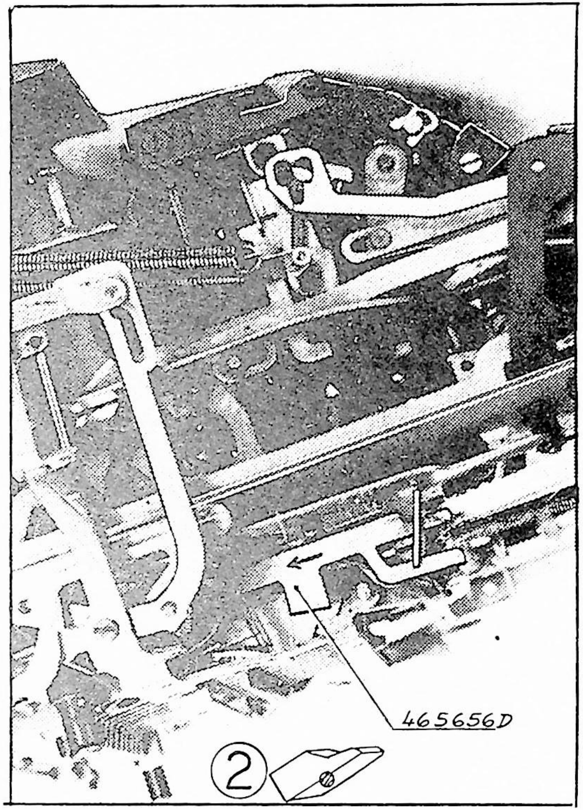
no → Act on lip A (fig. 2) forming it downward to decrease the displacement or upward to increase → Plug cord in → FFG



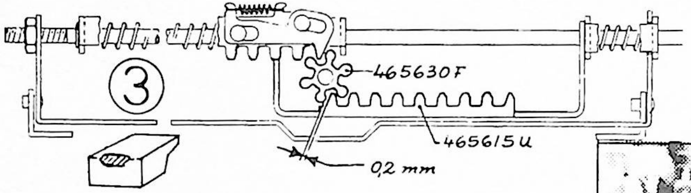
PINION 465630F ADJUSTMENT

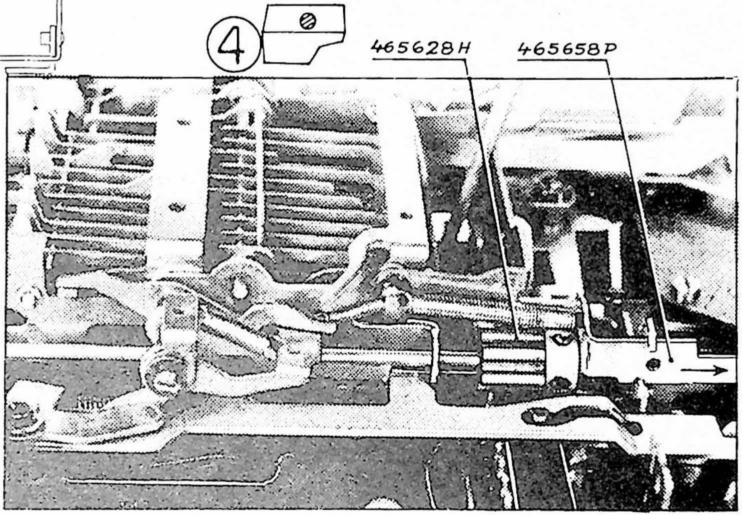
①





②





Wing Y of counter 465615U has a positive engagement with rack K (fig.1)

yes → FFG

no ↓

Unjam machine by pushing slider 465656D (fig. 2) rearward and finishing operation in progress

Enter a number of digits in order to get to the pinion 465628H set screws, then pull frontward link 465658P (fig. 4)

Loosen set screws of pinion 465628H then angularly position shaft with pinion 465630F to obtain clearance of 0.2 mm with respect to the wing of counter 465615U and tighten screws of pinion 465628H (fig. 4)

- Perform a # cycle
- Start multiplication 111 x 1

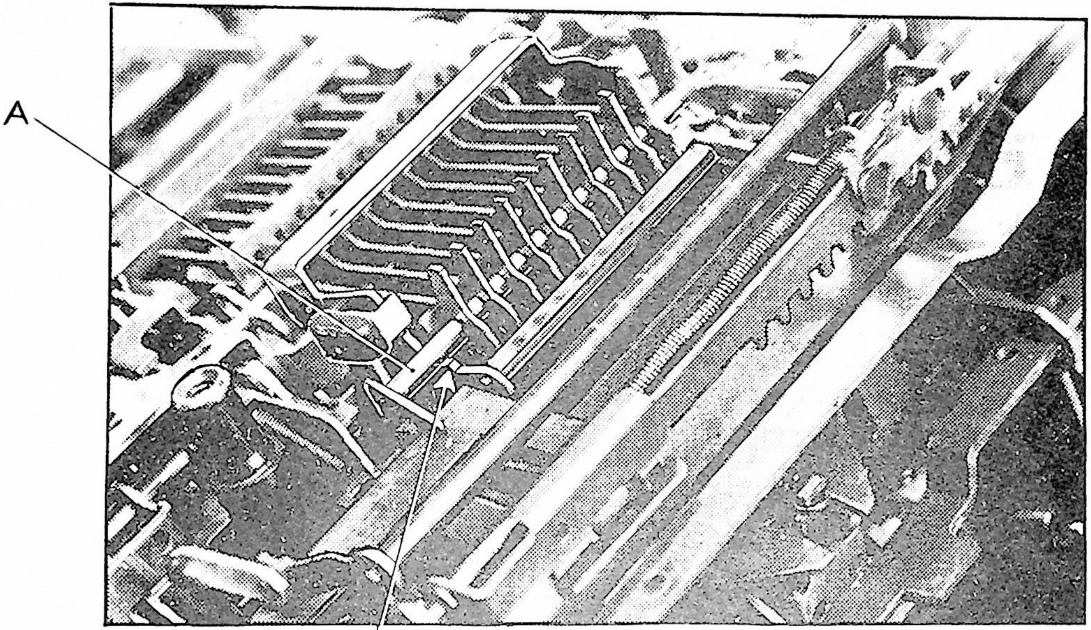
Rotate operating knob and verify that wing Y (fig. 1) is securely engaged with rack K

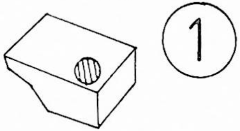
Condition is verified

yes → Complete the operation in progress → FFG

no

MULTIPLICATION STOP ADJUSTMENT





- Machine at rest
- Cord unplugged

Input 1 in memory

Enter ten 1's, then depress the ☰ key

Rotate knob until profile W is in contact with bar A (fig. 1)

Under these conditions slider 465656D (fig. 2 and 3) has a clearance of 0.1 to 0.3 mm with respect to slider B

yes → Wing X of bridge 465648M is 0.2 mm max. from extension of 465656D as in fig 2

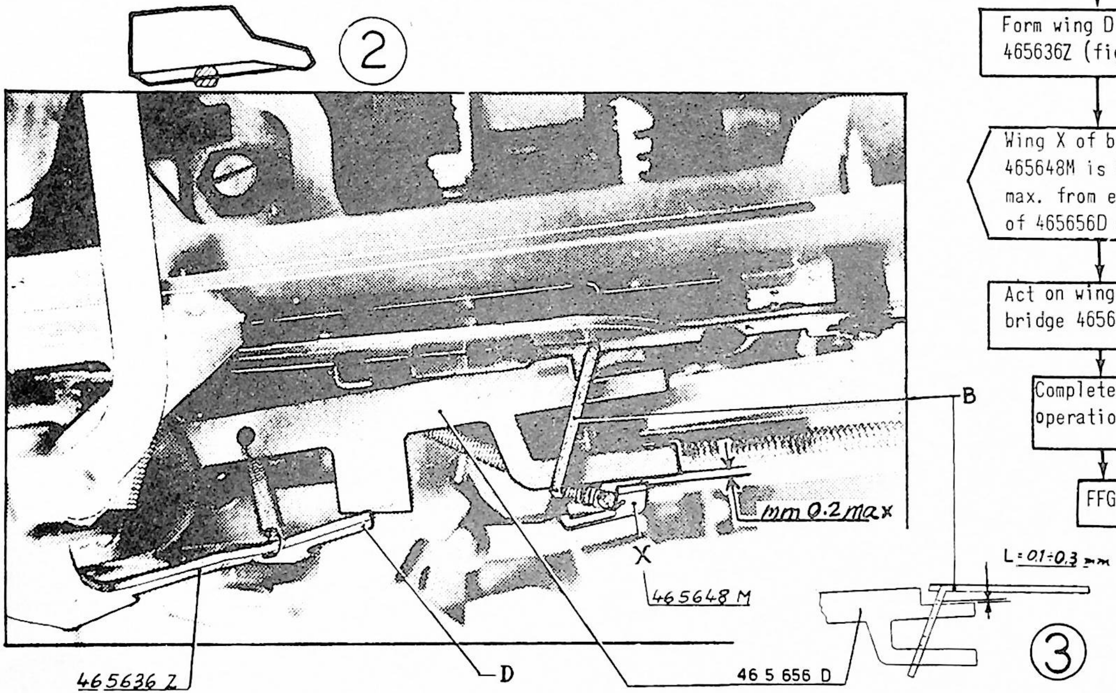
no → Form wing D of bridge 465636Z (fig. 2) → Wing X of bridge 465648M is 0.2 mm max. from extension of 465656D as in fig 2

Wing X of bridge 465648M is 0.2 mm max. from extension of 465656D as in fig 2

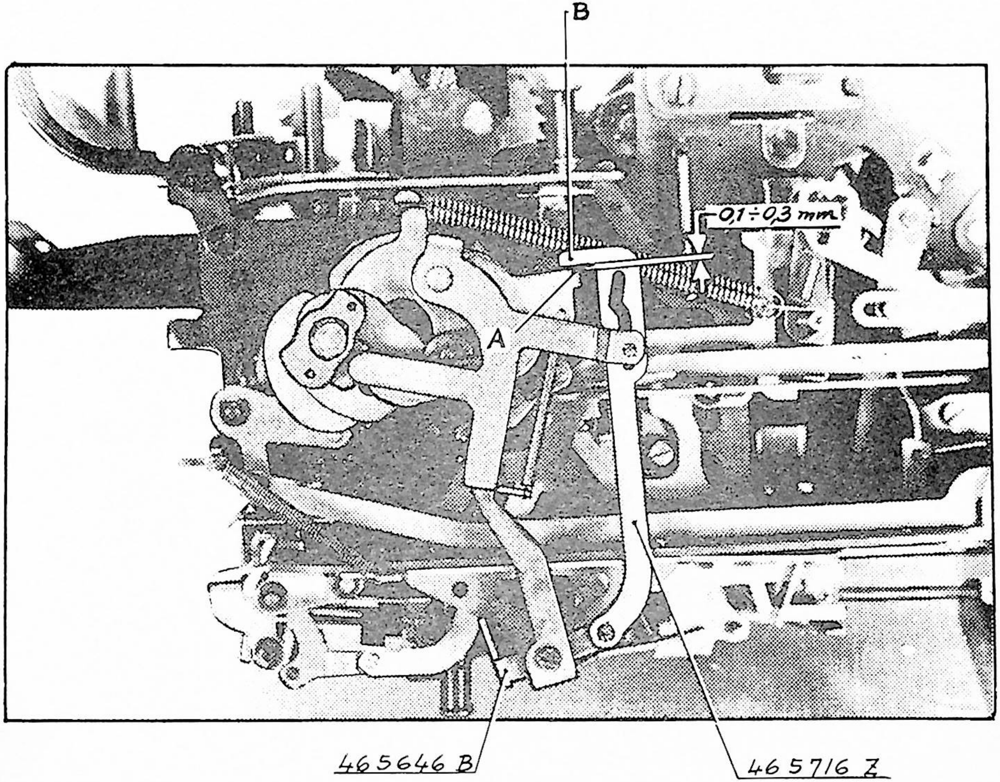
yes → Complete the operation

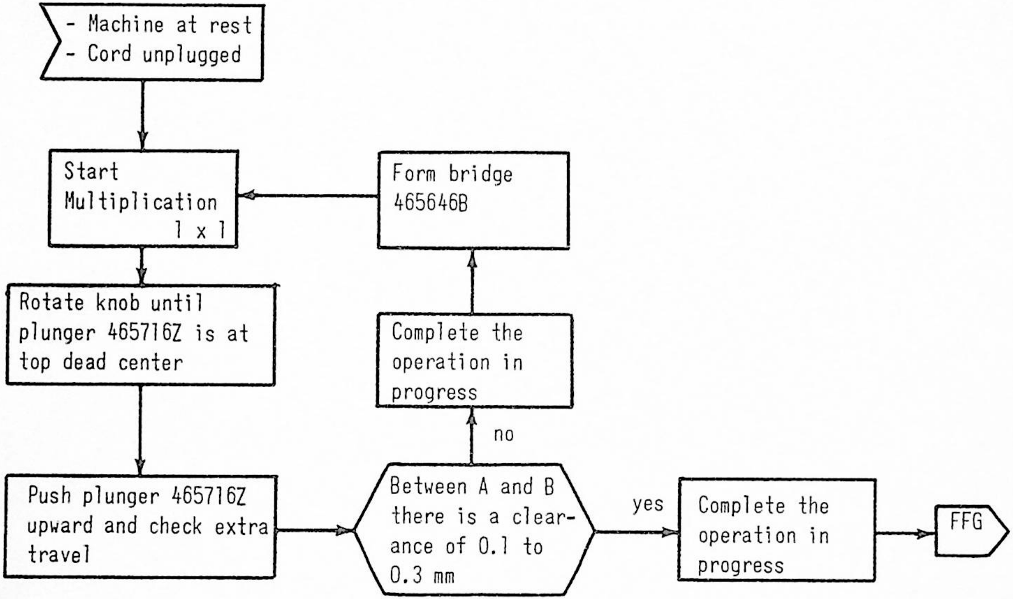
no → Act on wing X of bridge 465648M → Complete the operation

Complete the operation → FFG

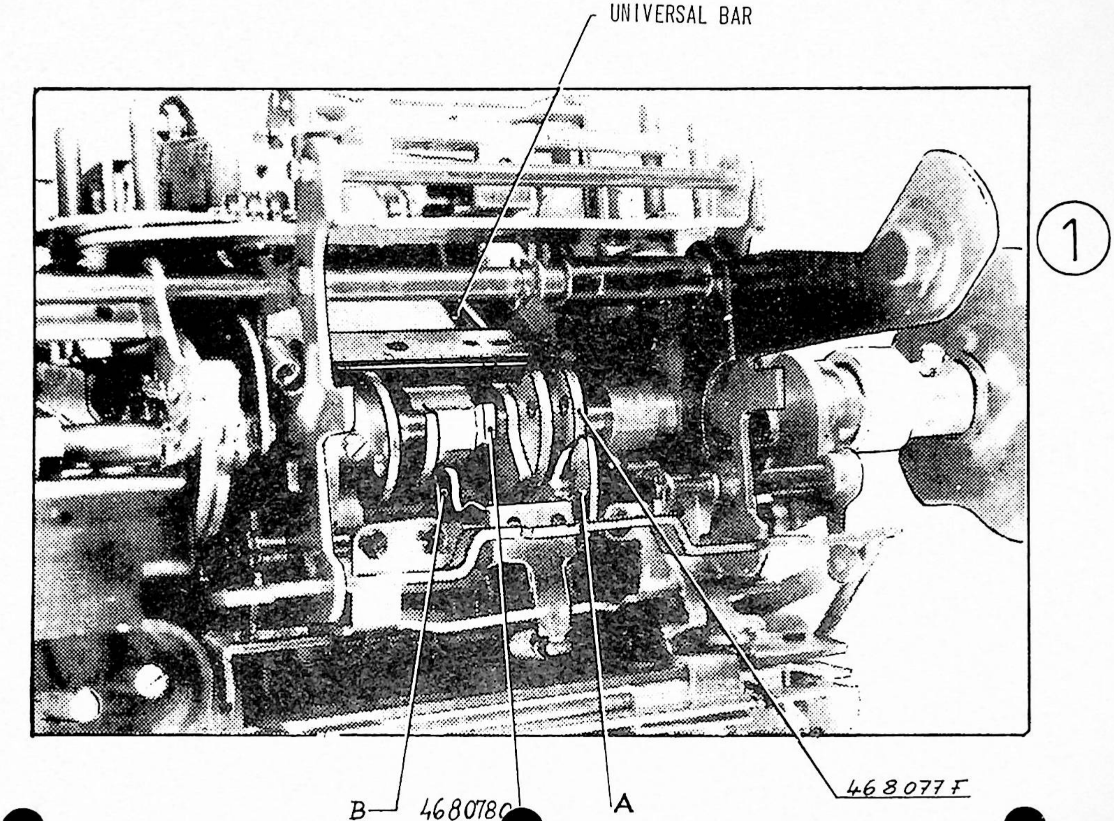


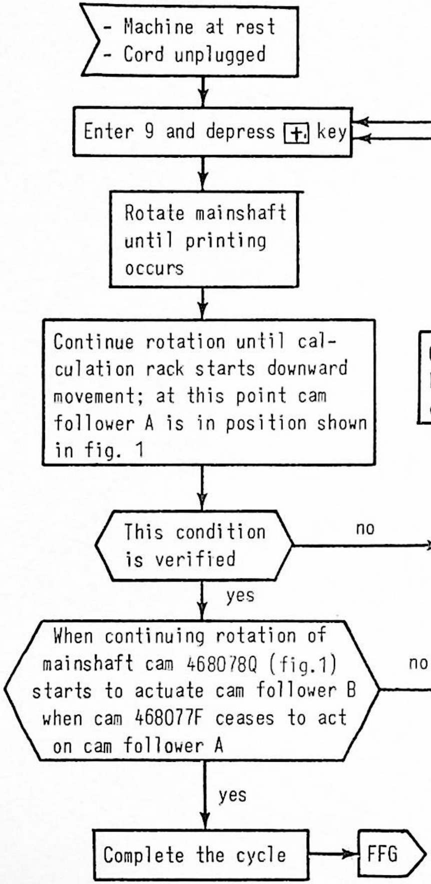
MULTIPLICATION STOP SECTION ESCAPEMENT COMMAND ADJUSTMENT

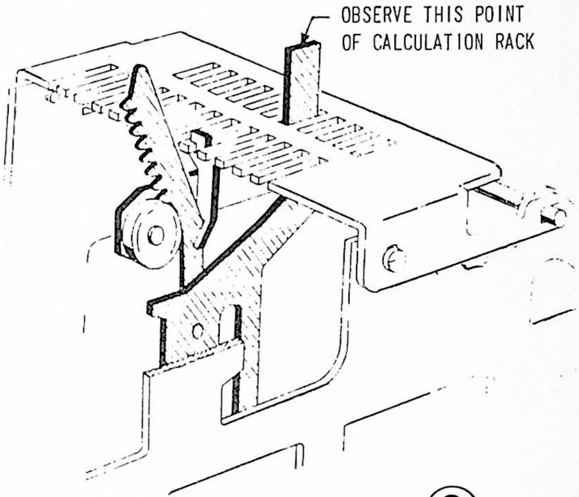



- Machine at rest
- Cord unplugged
Start Multiplication 1 x 1
Form bridge 465646B
Rotate knob until plunger 465716Z is at top dead center
Complete the operation in progress
no
Push plunger 465716Z upward and check extra travel
Between A and B there is a clearance of 0.1 to 0.3 mm
yes
Complete the operation in progress
FFG

CAMS 468077F AND 468078Q ANGULAR ADJUSTMENT

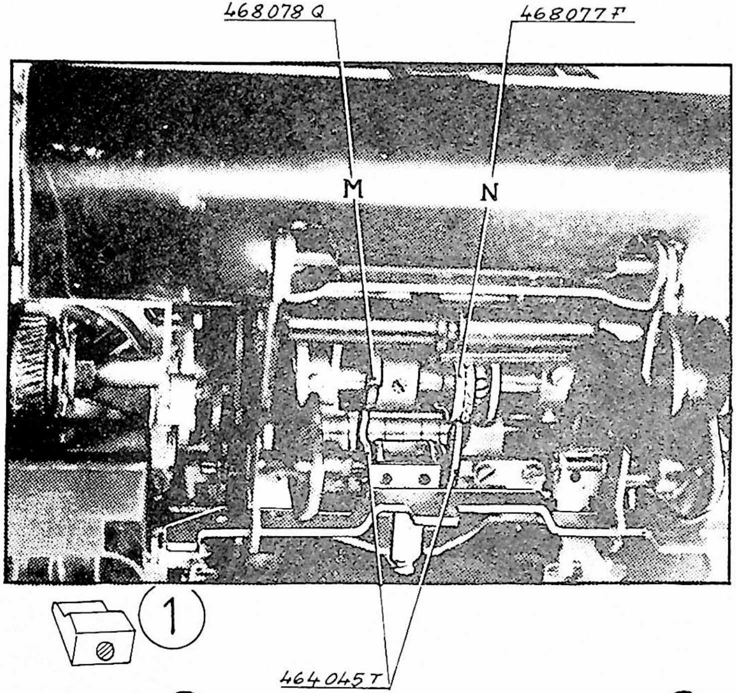



- Machine at rest
- Cord unplugged
Enter 9 and depress ⊞ key
Rotate mainshaft until printing occurs
Continue rotation until calculation rack starts downward movement; at this point cam follower A is in position shown in fig. 1
This condition is verified
no
Complete the cycle
Obtain this condition by angularly positioning cam 468077F
yes
When continuing rotation of mainshaft cam 468078Q (fig.1) starts to actuate cam follower B when cam 468077F ceases to act on cam follower A
no
Complete the cycle
To obtain required condition angularly adjust cam 468078Q
yes
Complete the cycle
FFG


OBSERVE THIS POINT OF CALCULATION RACK

②

BRIDGE 468344P TRAVEL ADJUSTMENT



- Machine at rest
- Cord unplugged

- Depress T key
- Rotate mainshaft approximately 90°

Cam followers 464045T are centered in respect to profiles M and N of cams (fig.1)

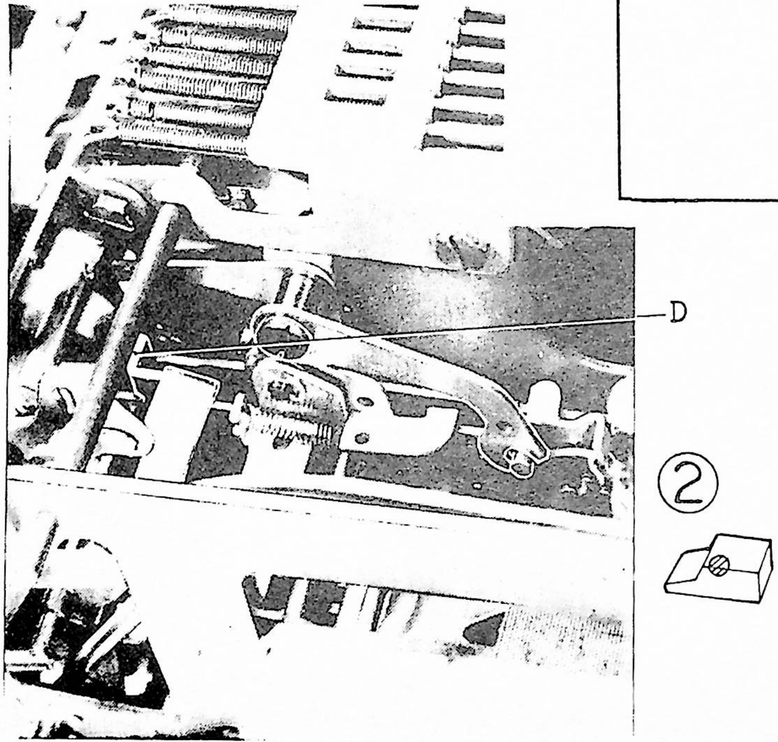
yes

FFG

no

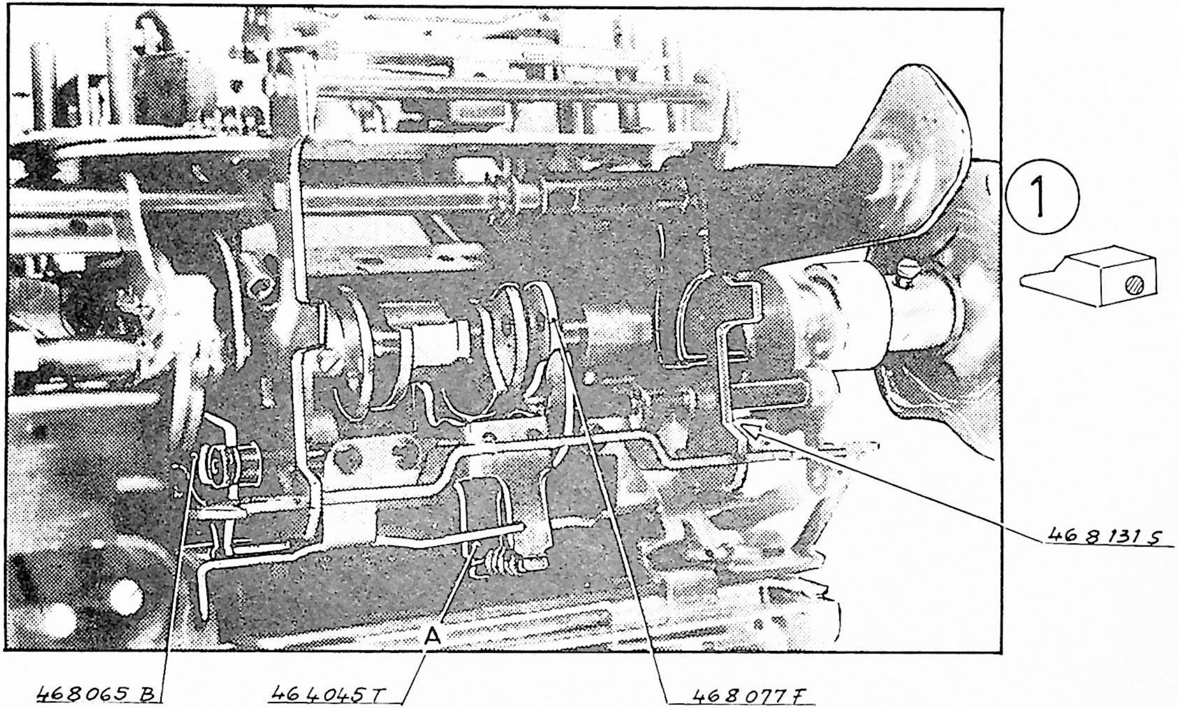
Complete cycle

To obtain centering of cam followers act on wing D (fig. 2)



②

REGISTER WHEEL TO CALCULATION RACK MESH ADJUSTMENT



- Machine at rest
- Cord unplugged

The register wheel locking bar is worn — yes → Have machine sent to repair shop

no

Depress the ⊟ key and rotate main shaft until cam 468077F is in the position shown in figure 1

Push plates 468065B and 468131S (fig. 1 & 2) frontward and check play

The play is from 0.1 to 0.2 mm — yes → FFG

no

Complete cycle

Act on wing A of bridge 464045T (fig. 1)

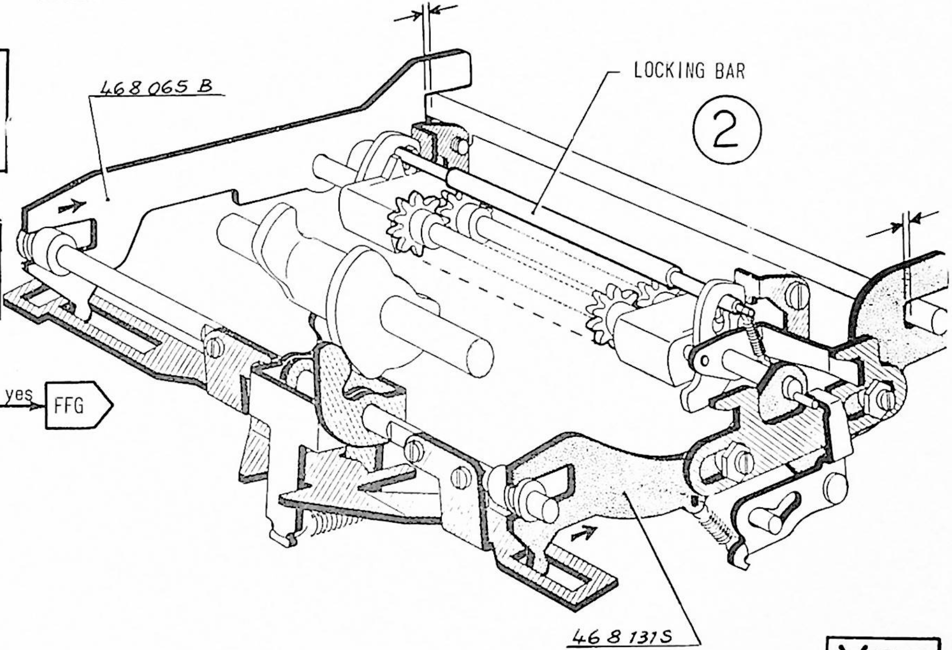
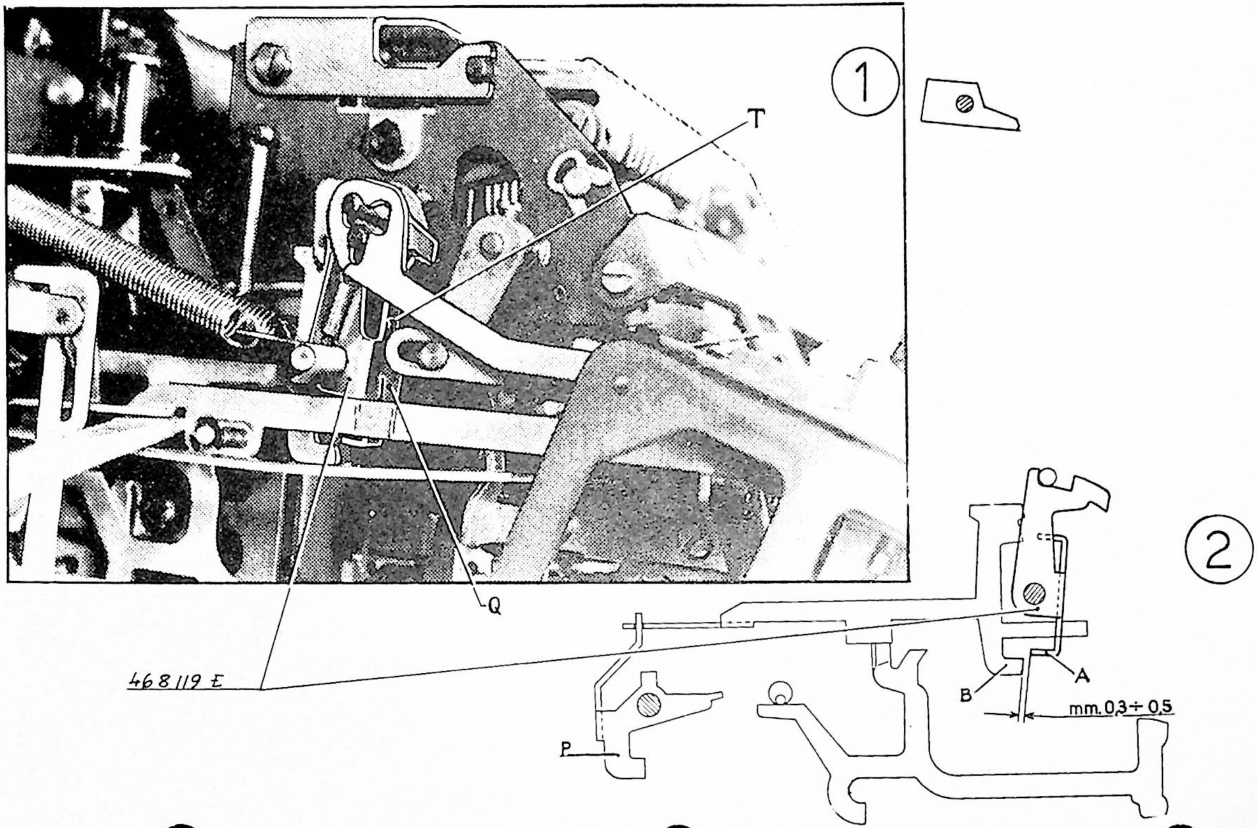


PLATE 463064V TO BRIDGE 468119E ADJUSTMENT



- Machine at rest

Extensions Q and T of bridge 468119E are deformed (fig. 1)

yes

Straighten them

no

With the credit balance indicator in the position shown in fig.1 there is a clearance of 0.3 to 0.5 mm between extensions A & B (fig.2)

yes

FFG

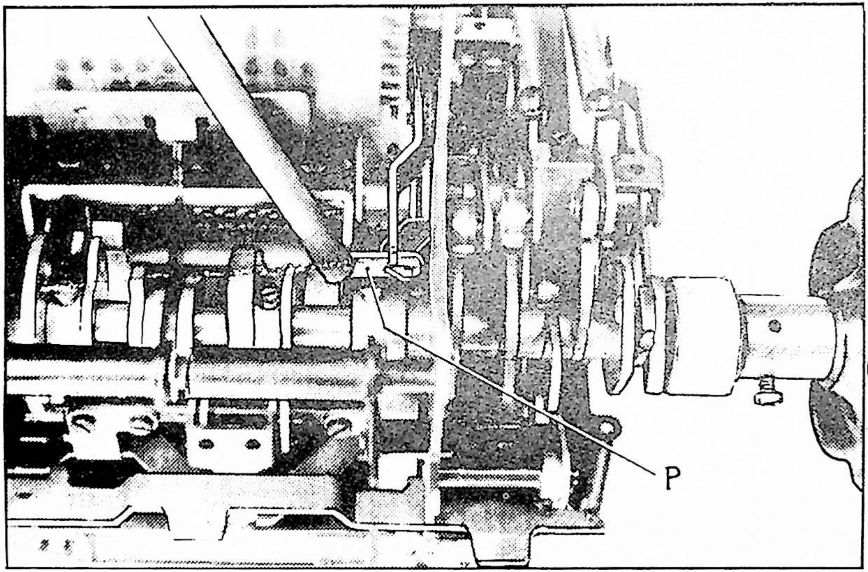
no

Remove ribbon

To obtain required clearance act on arm P (fig. 3)

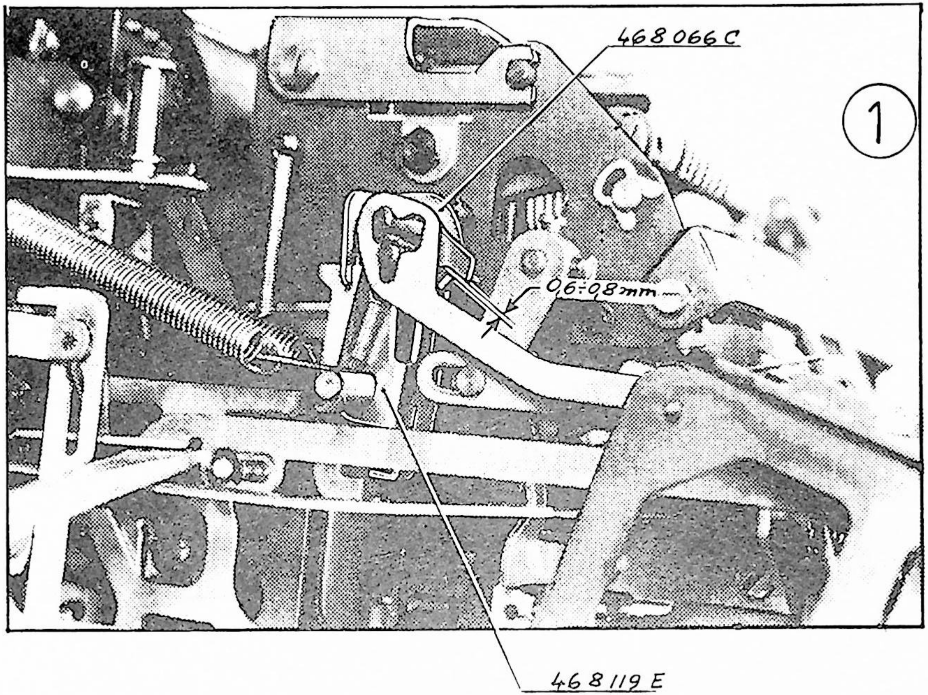
Install ribbon

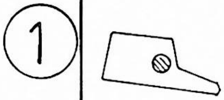
FFG



③

CREDIT BALANCE CONTROL CRANK 468066C ADJUSTMENT





- Machine at rest
- Cord unplugged

Rotate the bridge 468119E to the position shown in fig. 1

In this condition the clearance of 0.6 to 0.8 indicated in fig. 1 exists

no → Angularly adjust crank 468066C leaving a slight end play to shaft

yes

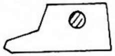
Depress the T key

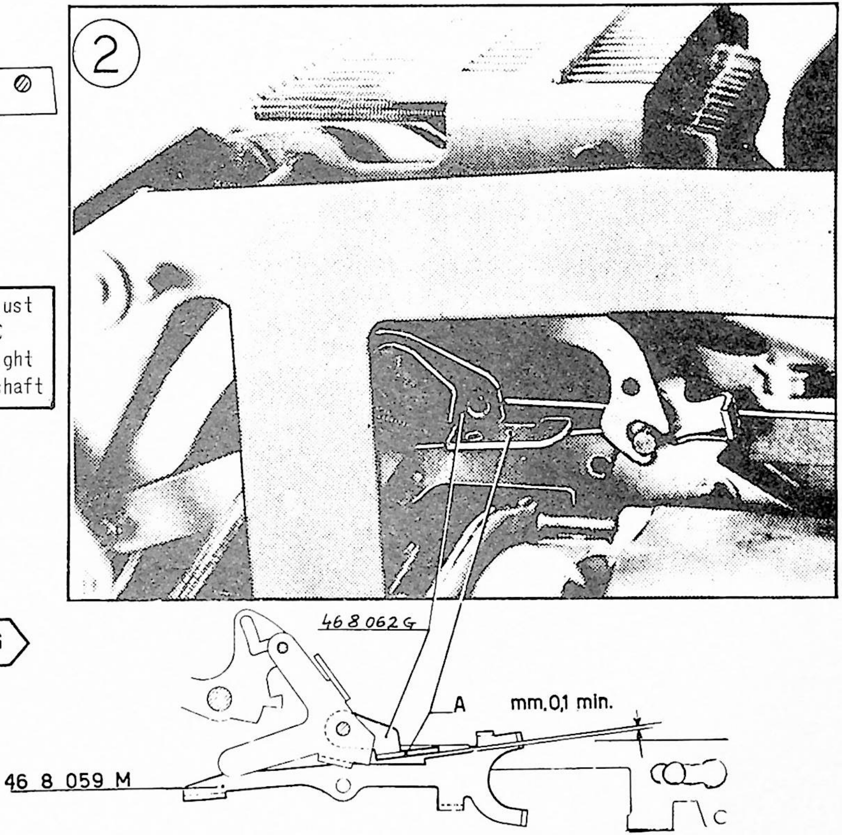
Extension A of crank 468062G has a minimum clearance of 0.1 mm (fig. 2)

yes → FFG

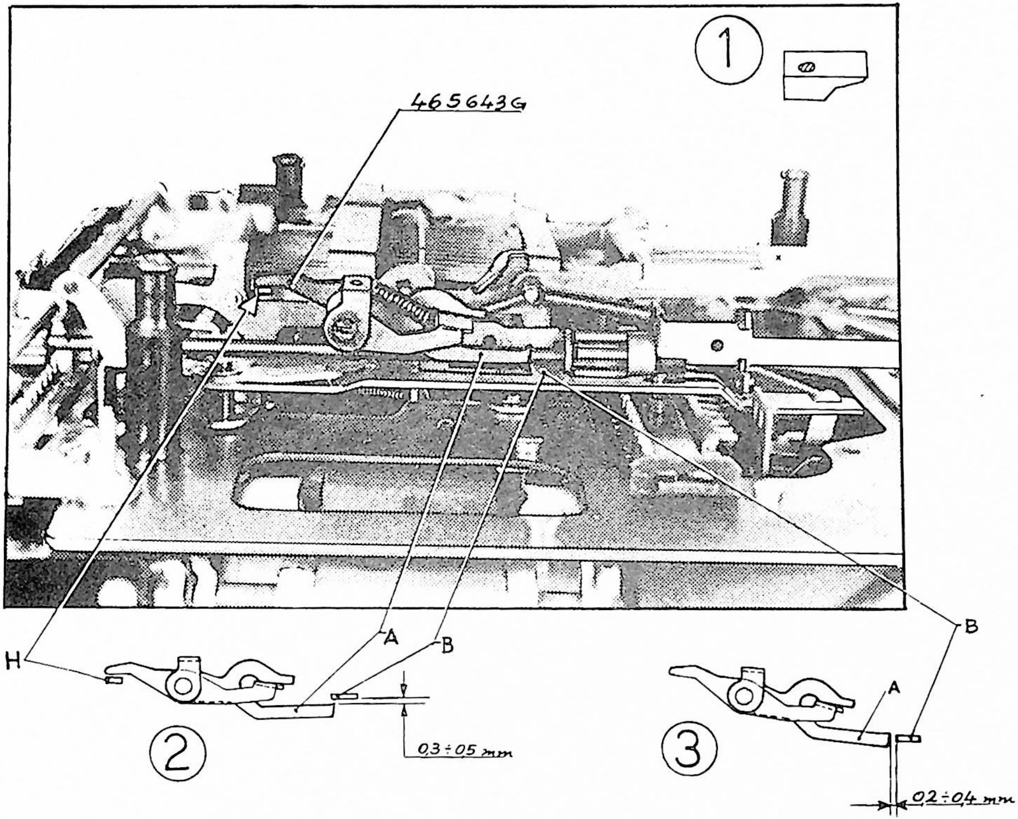
no

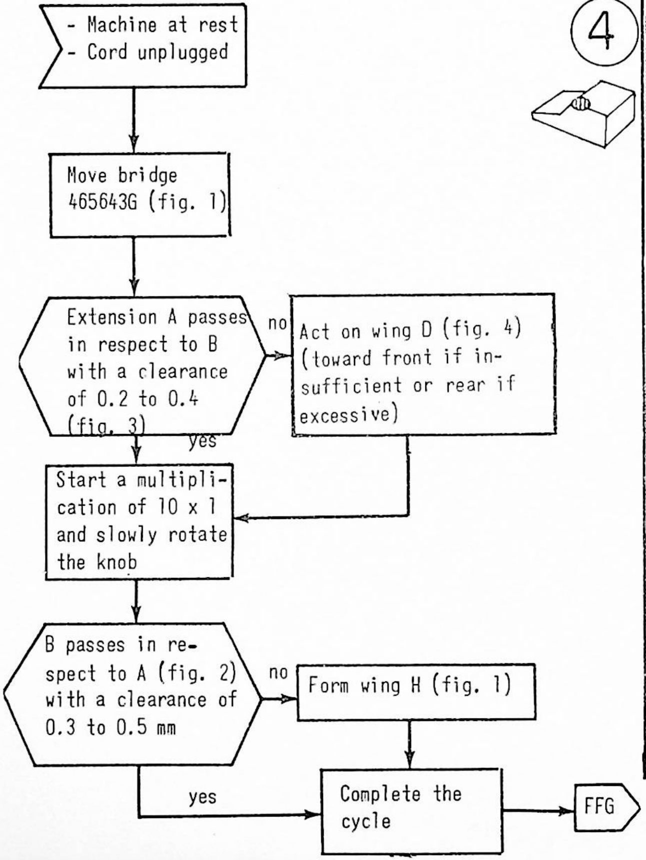
Form extension A to obtain the clearance → FFG

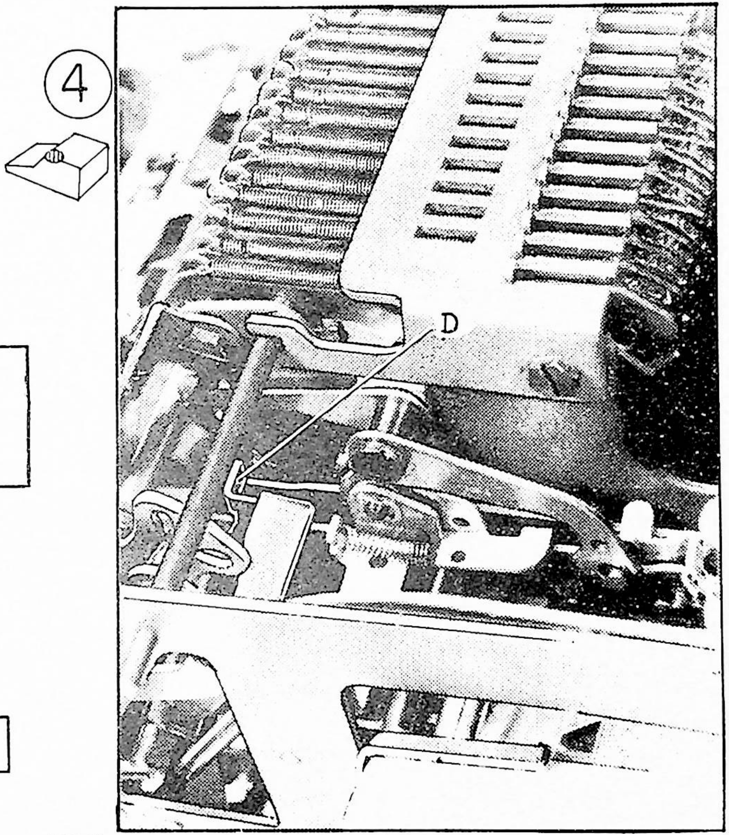




MULTIPLICATION CONTROL BRIDGE 465643G POSITION ADJUSTMENT

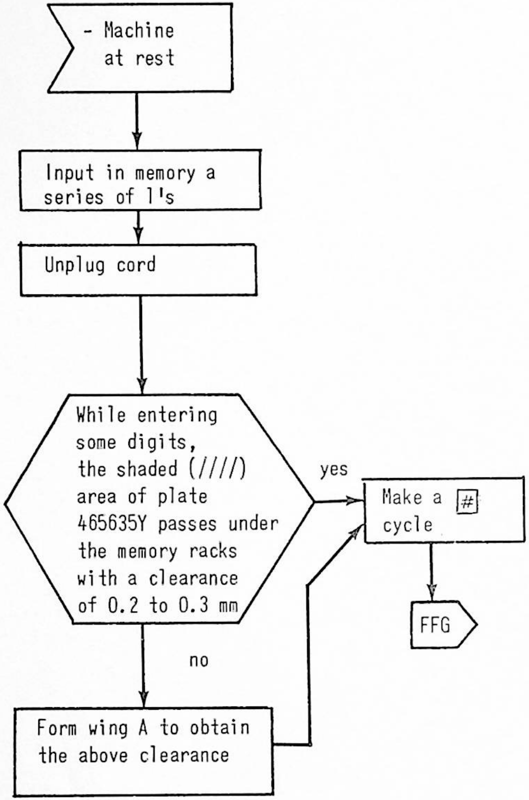


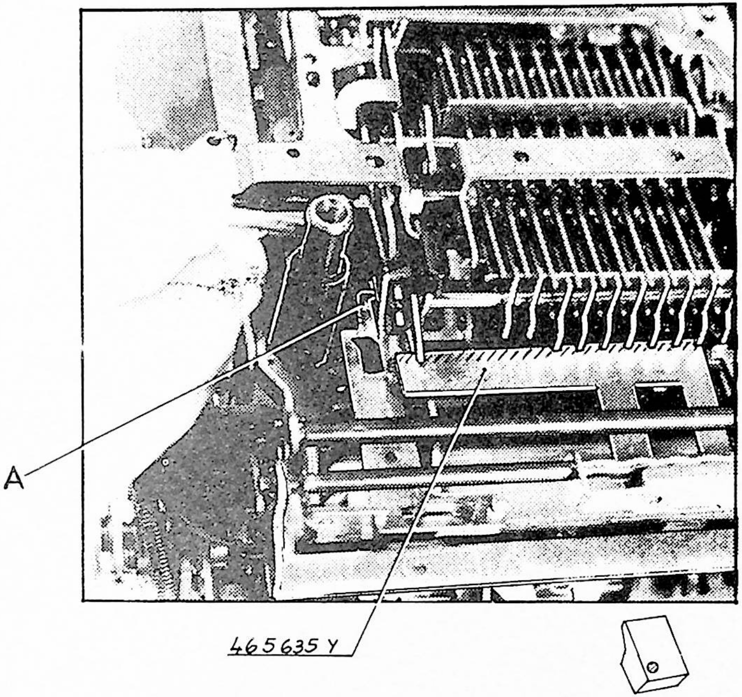

- Machine at rest
- Cord unplugged
Move bridge 465643G (fig. 1)
Extension A passes in respect to B with a clearance of 0.2 to 0.4 (fig. 3)
no
Act on wing D (fig. 4) (toward front if insufficient or rear if excessive)
yes
Start a multiplication of 10 x 1 and slowly rotate the knob
B passes in respect to A (fig. 2) with a clearance of 0.3 to 0.5 mm
no
Form wing H (fig. 1)
yes
Complete the cycle
FFG


D

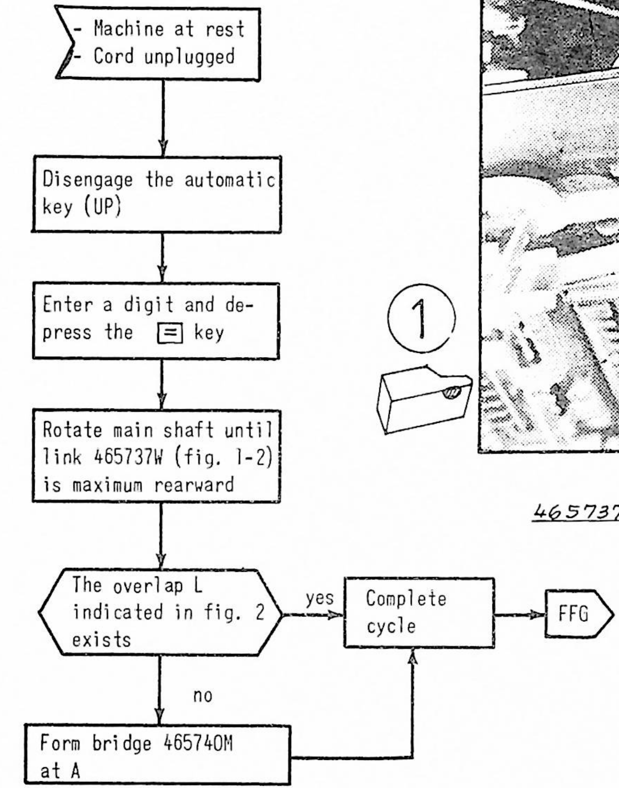
4

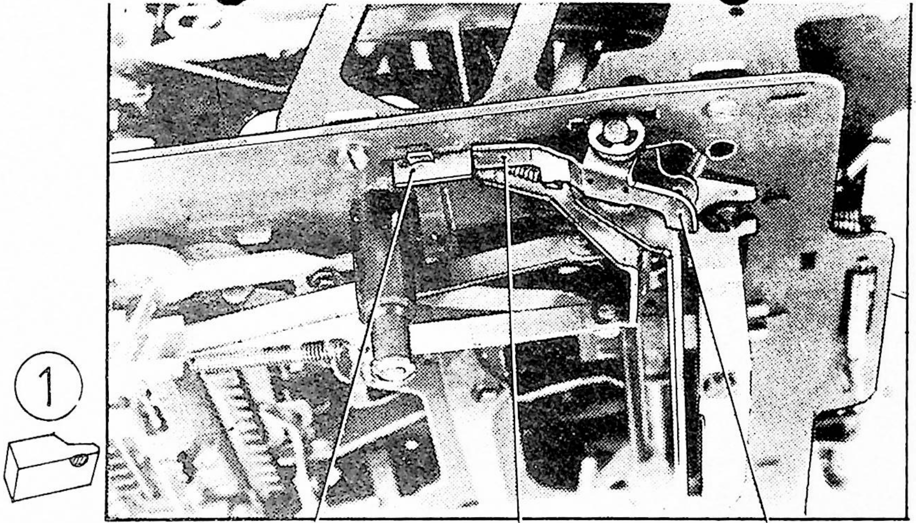
PLATE 465635Y REST POSITION ADJUSTMENT

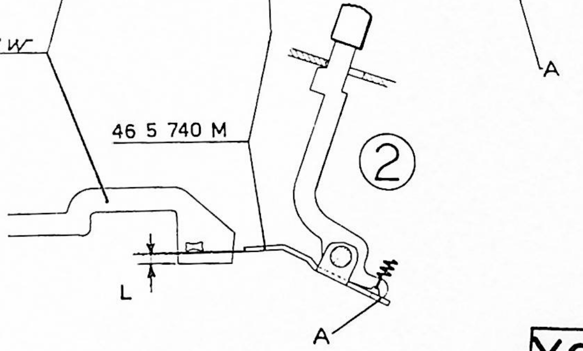

- Machine at rest
Input in memory a series of 1's
Unplug cord
While entering some digits, the shaded (////) area of plate 465635Y passes under the memory racks with a clearance of 0.2 to 0.3 mm
yes
Make a # cycle
FFG
no
Form wing A to obtain the above clearance



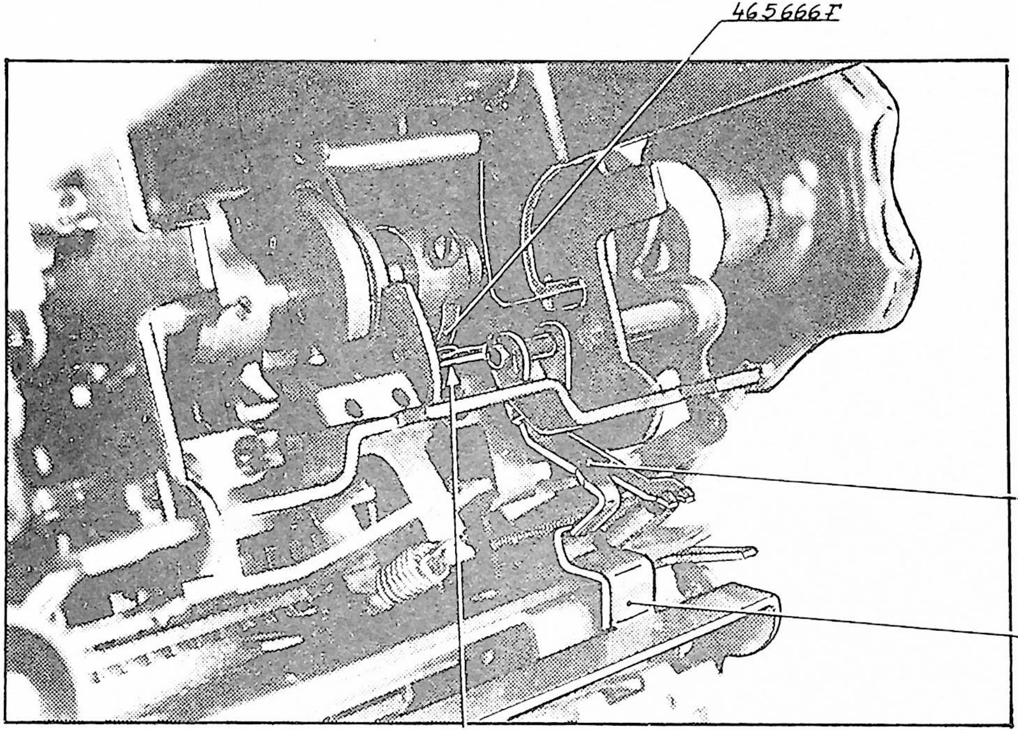
AUTOMATIC TOTAL UNIT ADJUSTMENT

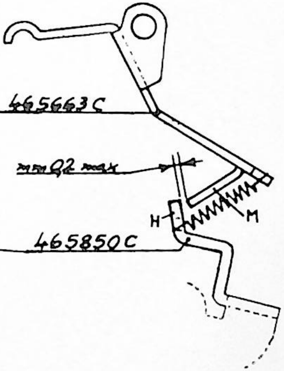

- Machine at rest
- Cord unplugged
Disengage the automatic key (UP)
Enter a digit and depress the = key
Rotate main shaft until link 465737W (fig. 1-2) is maximum rearward
The overlap L indicated in fig. 2 exists
yes
Complete cycle
FFG
no
Form bridge 465740M at A

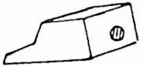


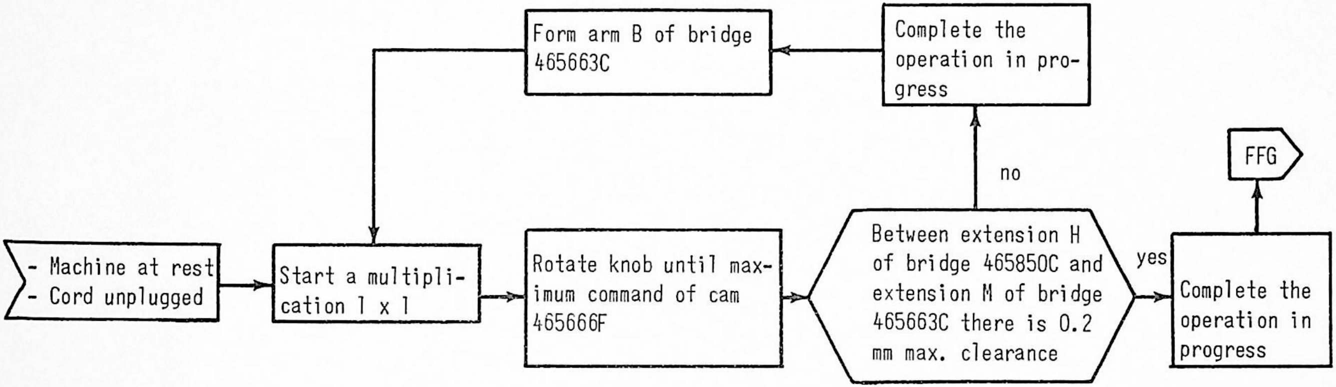


MEMORY RACKS RESTORING ADJUSTMENT

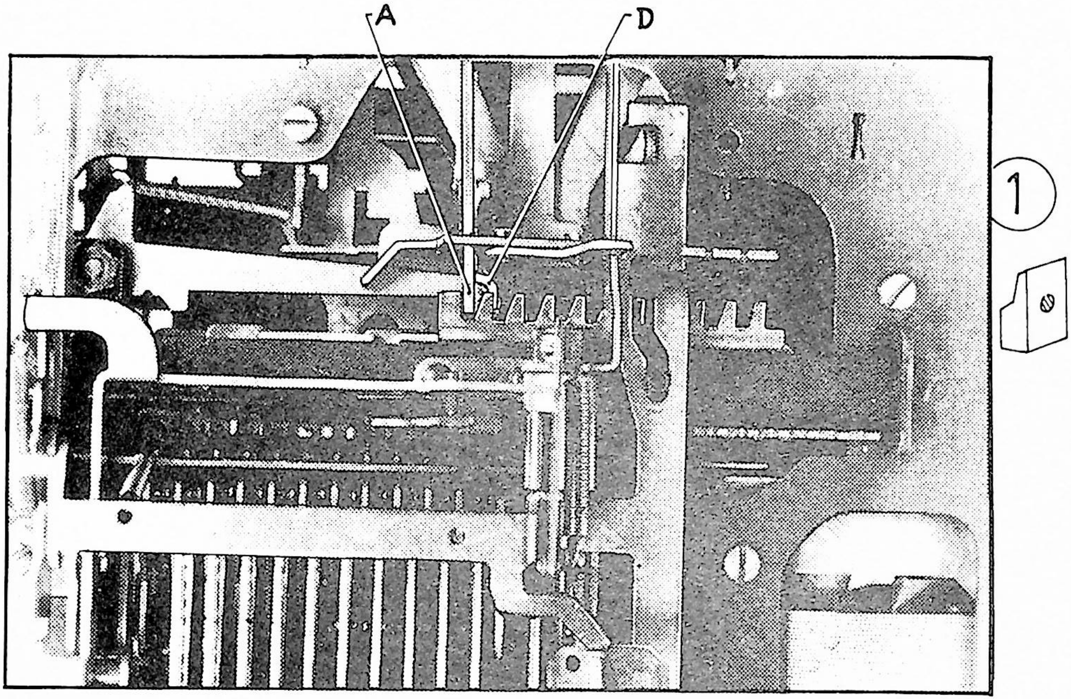


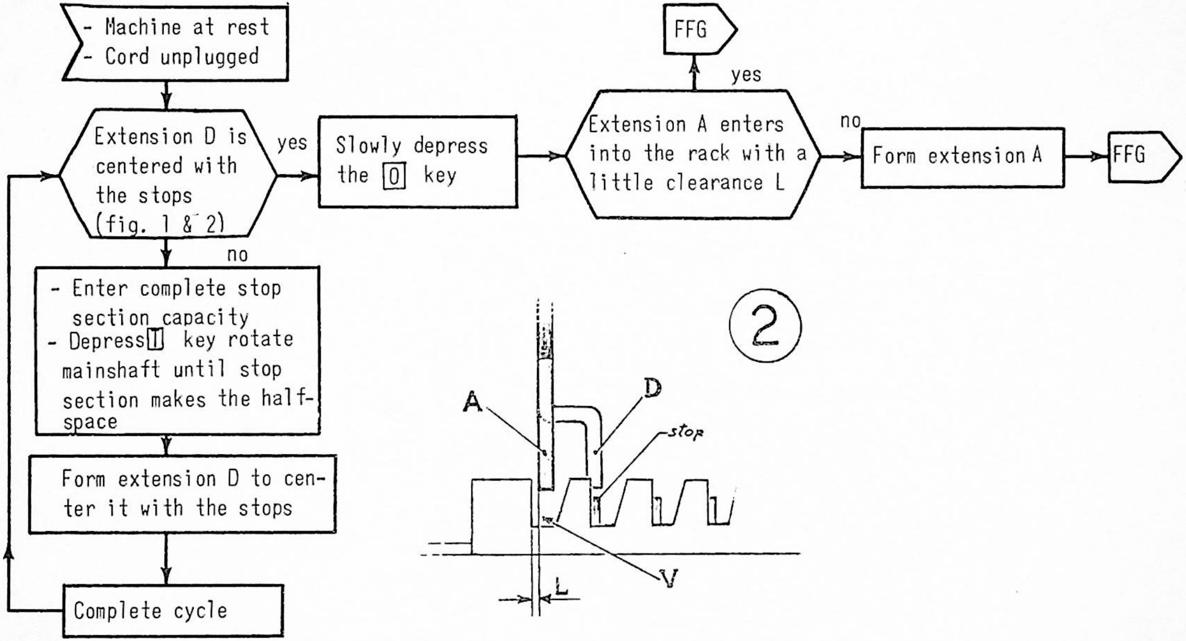





- Machine at rest
- Cord unplugged
Start a multiplication 1 x 1
Rotate knob until maximum command of cam 465666F
Between extension H of bridge 465850C and extension M of bridge 465663C there is 0.2 mm max. clearance
yes
Complete the operation in progress
FFG
no
Complete the operation in progress
Form arm B of bridge 465663C

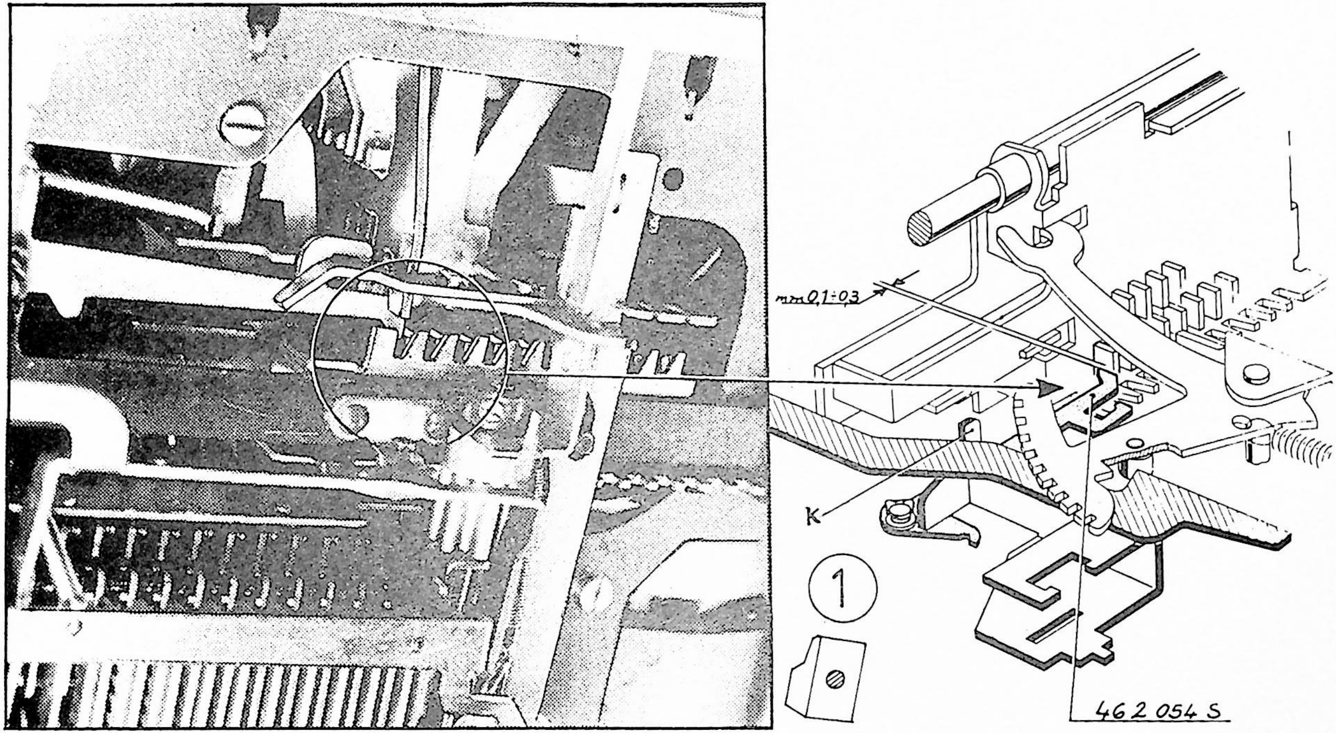
UNIVERSAL KEYBOARD BAR CENTERING

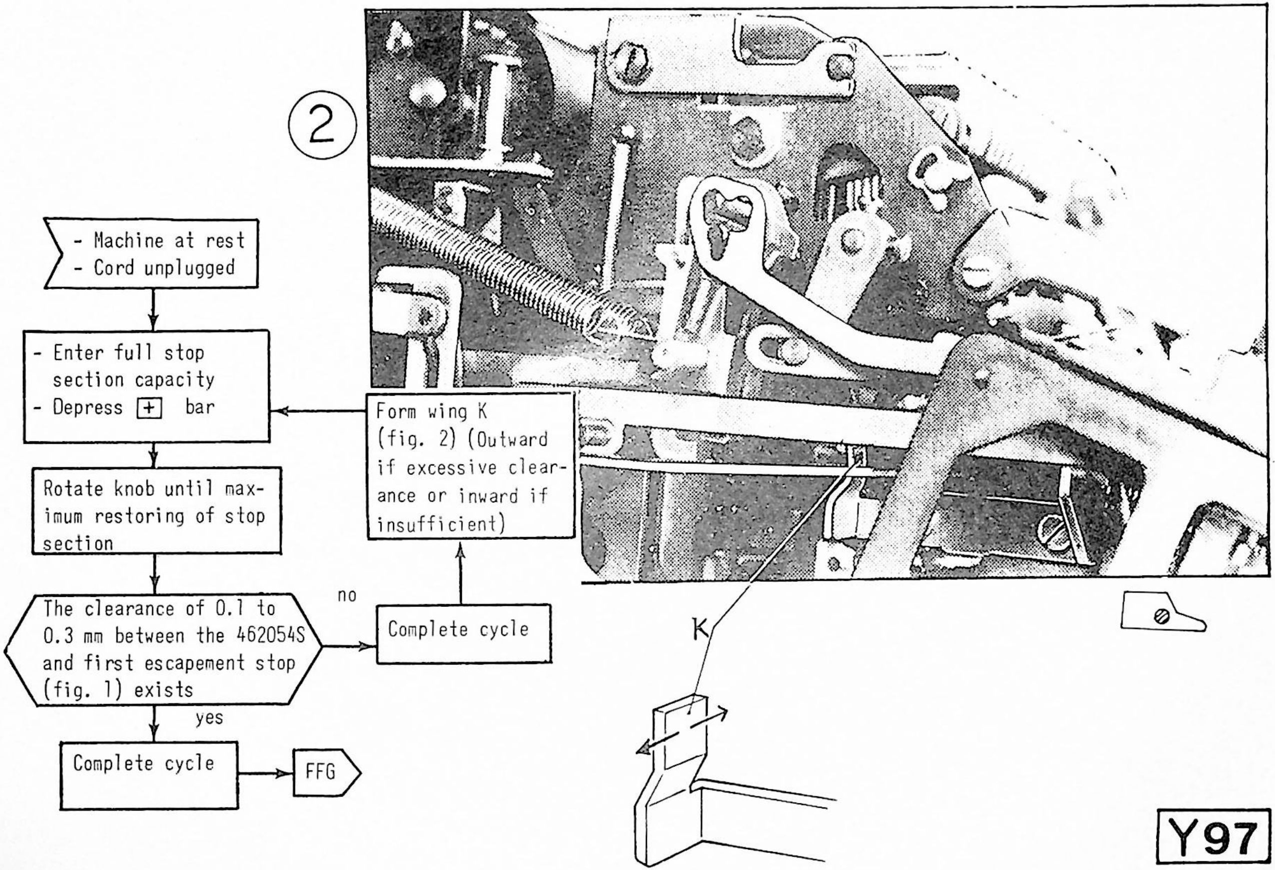



- Machine at rest
- Cord unplugged
Extension D is centered with the stops (fig. 1 & 2)
yes
Slowly depress the [0] key
Extension A enters into the rack with a little clearance L
yes
FFG
no
Form extension A
FFG
no
- Enter complete stop section capacity
- Depress [T] key rotate mainshaft until stop section makes the half-space
Form extension D to center it with the stops
Complete cycle
A
D
stop
V
L

②

STOP-SECTION RESTORE ADJUSTMENT





②

- Machine at rest
- Cord unplugged

- Enter full stop section capacity
- Depress [+] bar

Rotate knob until maximum restoring of stop section

The clearance of 0.1 to 0.3 mm between the 462054S and first escapement stop (fig. 1) exists

no

Complete cycle

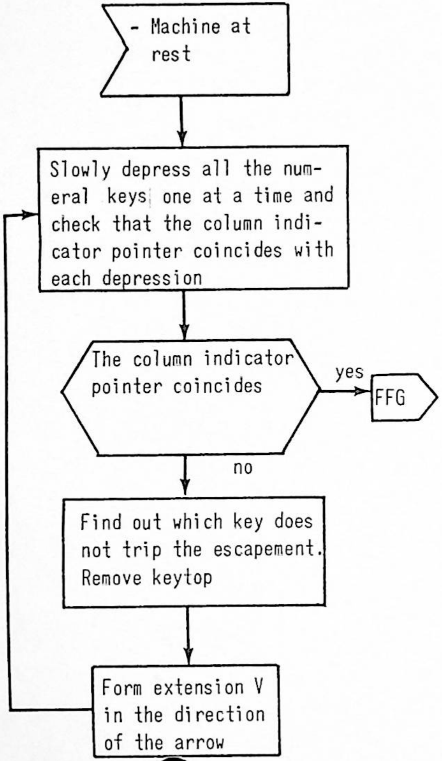
Form wing K (fig. 2) (Outward if excessive clearance or inward if insufficient)

yes

Complete cycle

FFG

MC 23- NUMERAL KEYSTEM DISENGAGEMENT ADJUSTMENT



- Machine at rest

Slowly depress all the numeral keys one at a time and check that the column indicator pointer coincides with each depression

The column indicator pointer coincides

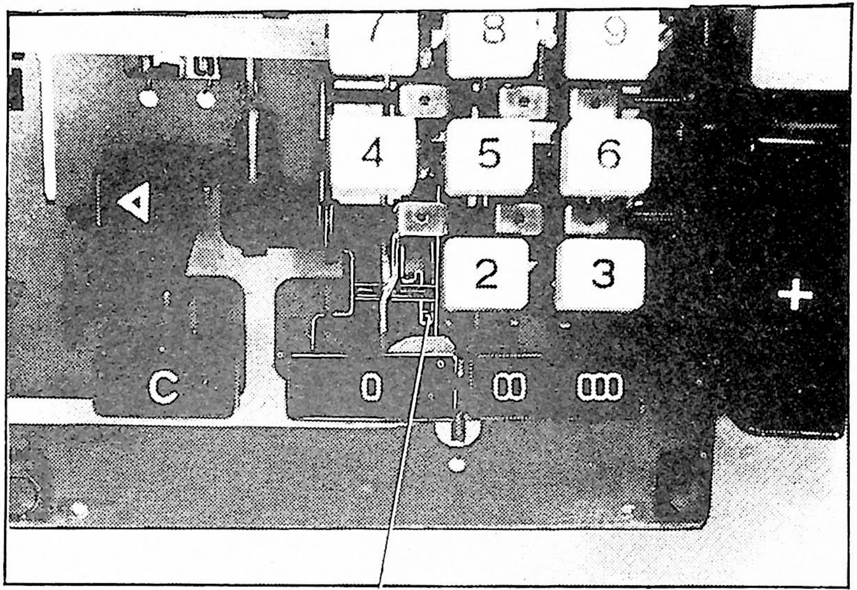
yes

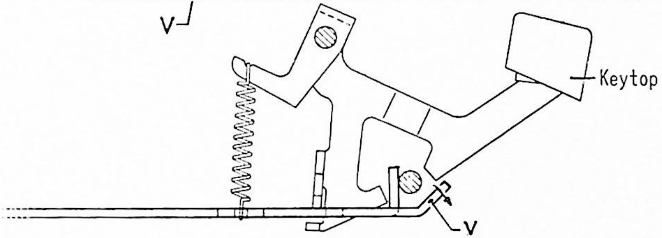
FFG

no

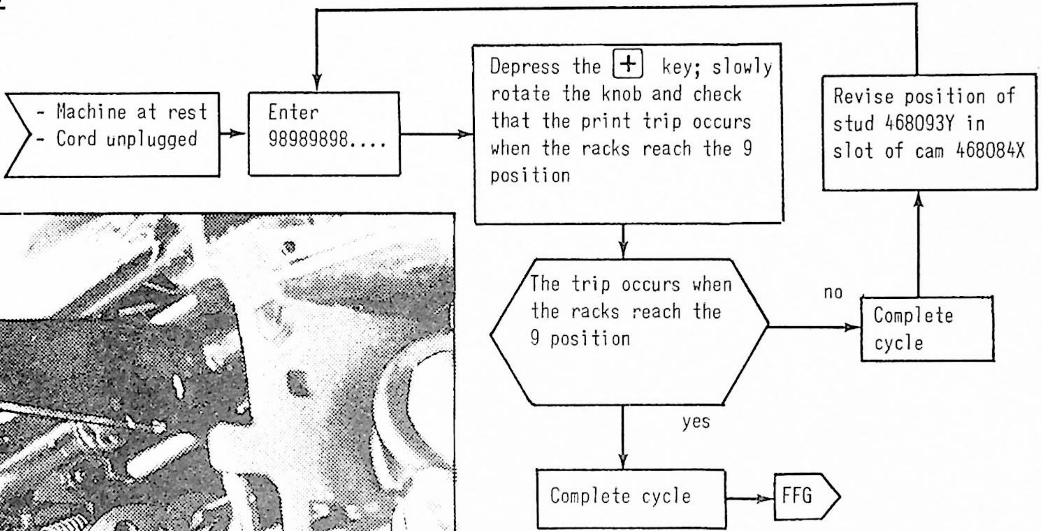
Find out which key does not trip the escapement. Remove keytop

Form extension V in the direction of the arrow





PRINT TRIP ADJUSTMENT



- Machine at rest
- Cord unplugged

Enter 98989898....

Depress the + key; slowly rotate the knob and check that the print trip occurs when the racks reach the 9 position

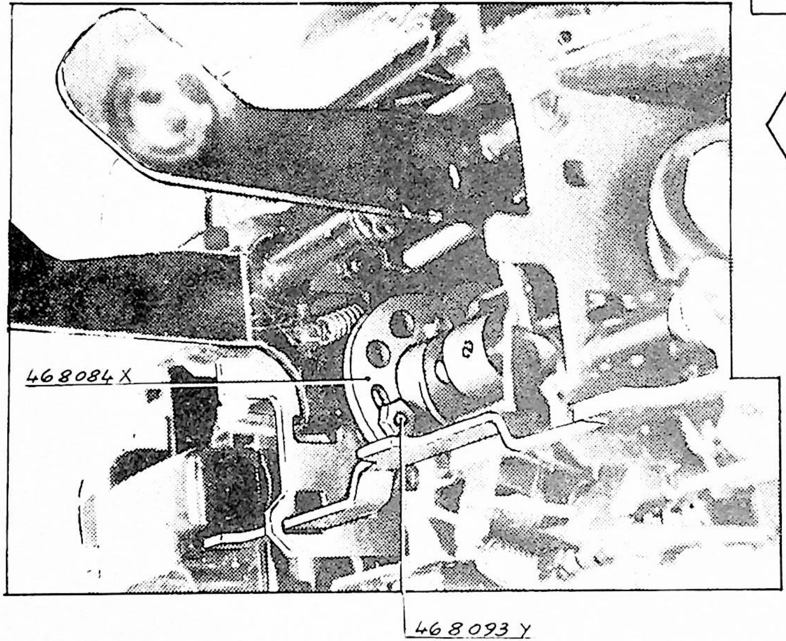
The trip occurs when the racks reach the 9 position

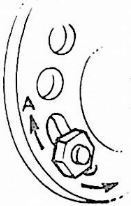
Complete cycle

Revise position of stud 468093Y in slot of cam 468084X

Complete cycle

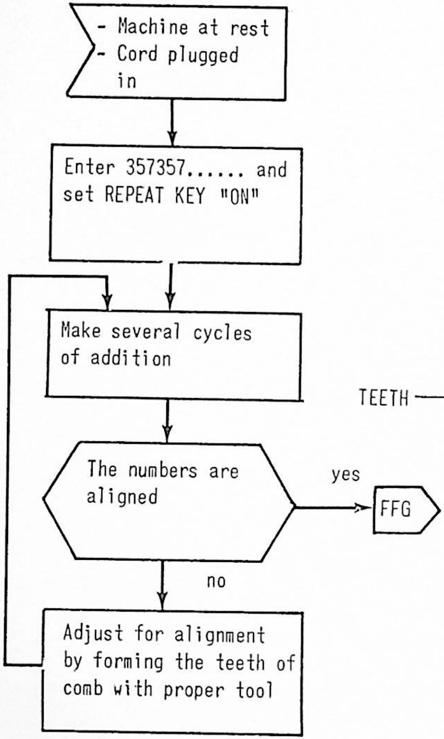
FFG

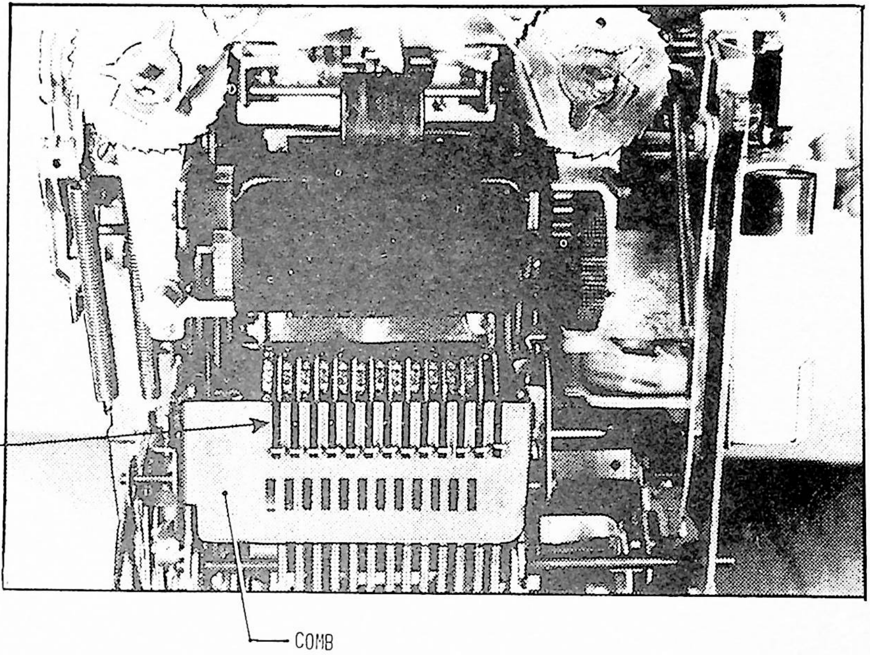




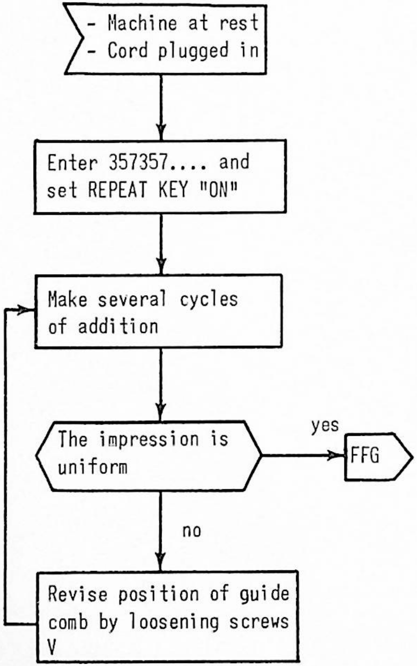
TOWARDS A TO RETARD TRIP OR AWAY FROM A TO ADVANCE

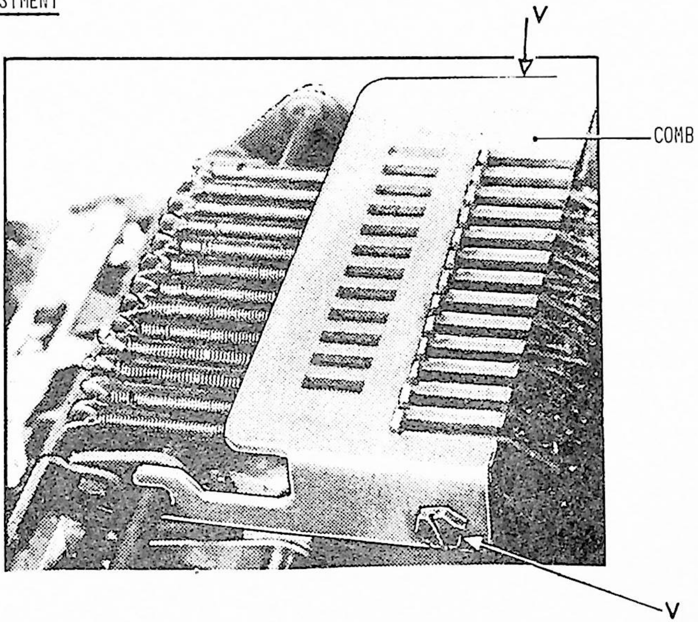
PRINT SLIDERS GUIDE COMB TEETH ADJUSTMENT


- Machine at rest
- Cord plugged in
Enter 357357...... and set REPEAT KEY "ON"
Make several cycles of addition
The numbers are aligned
yes
FFG
no
Adjust for alignment by forming the teeth of comb with proper tool

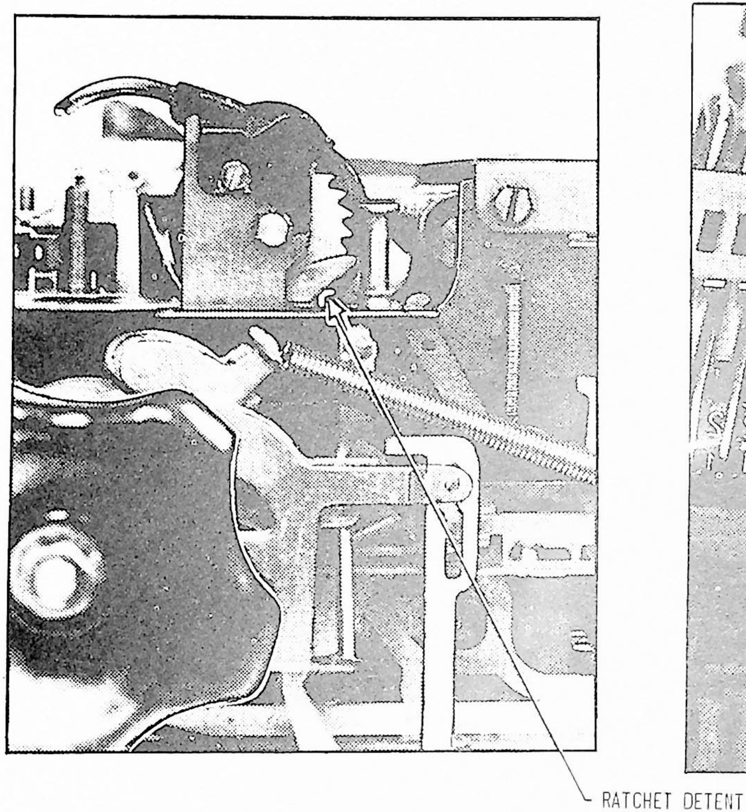


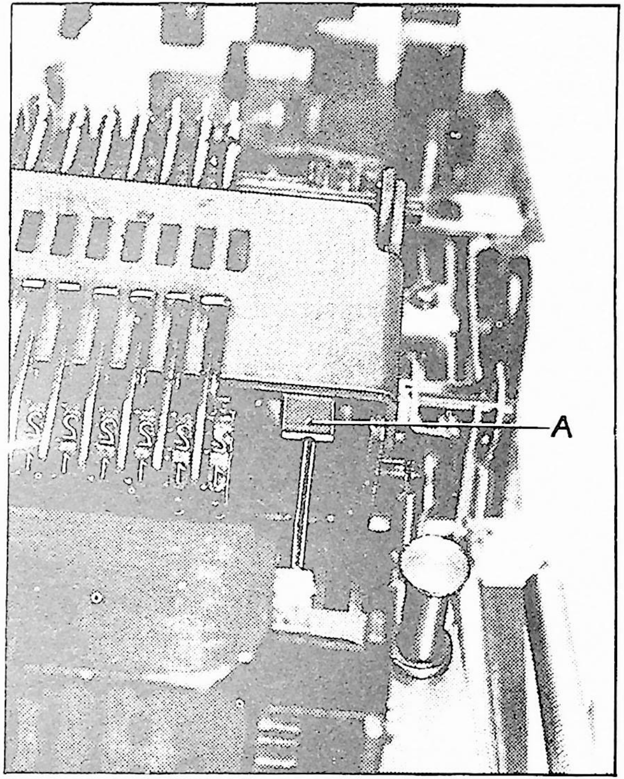
PRINT SLIDERS GUIDE COMB ADJUSTMENT

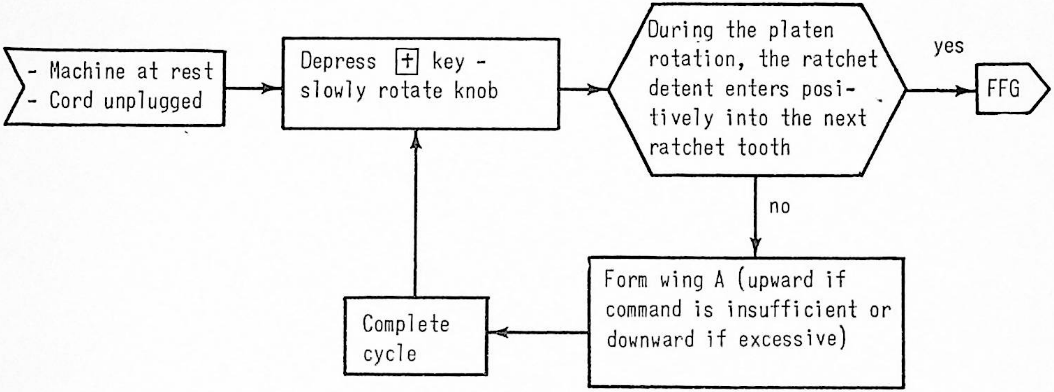

- Machine at rest
- Cord plugged in
Enter 357357.... and set REPEAT KEY "ON"
Make several cycles of addition
The impression is uniform
yes
FFG
no
Revise position of guide comb by loosening screws V



LINE SPACE ADJUSTMENT

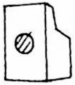


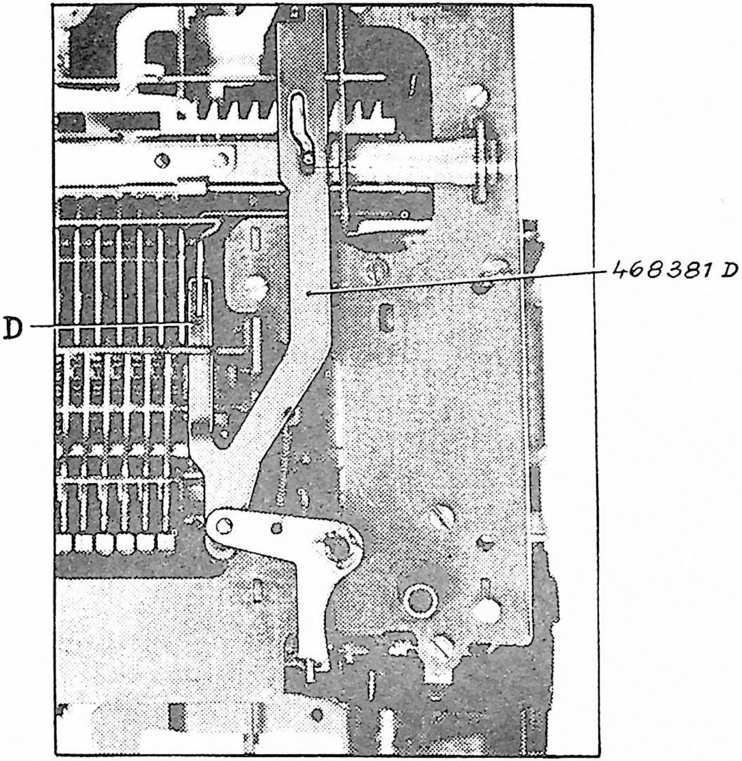



- Machine at rest
- Cord unplugged
Depress + key - slowly rotate knob
During the platen rotation, the ratchet detent enters positively into the next ratchet tooth
yes
FFG
no
Form wing A (upward if command is insufficient or downward if excessive)
Complete cycle

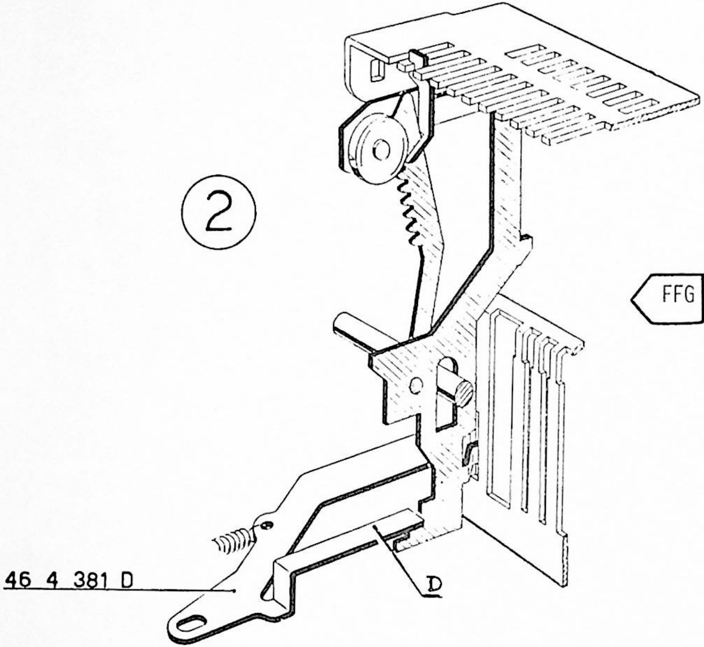
S-Q-E-23-SYMBOLS SELECTOR STOP LINK 464381D ADJUSTMENT

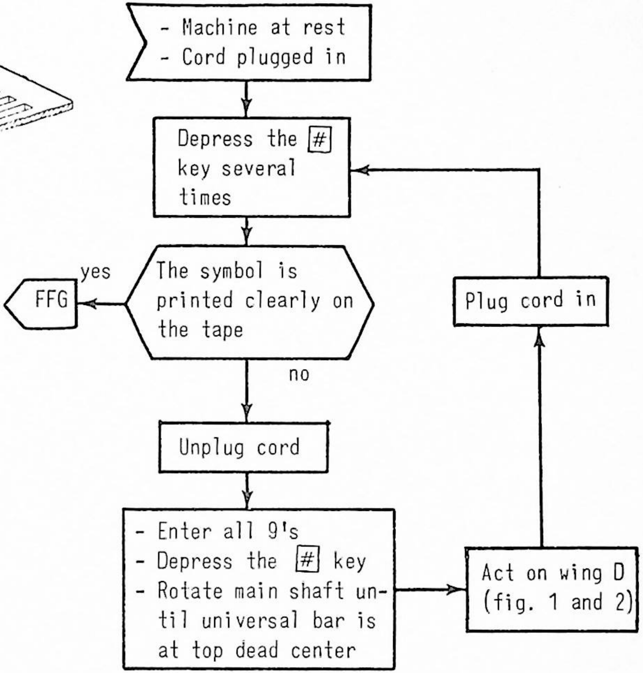
①





②




- Machine at rest
- Cord plugged in

Depress the # key several times

The symbol is printed clearly on the tape

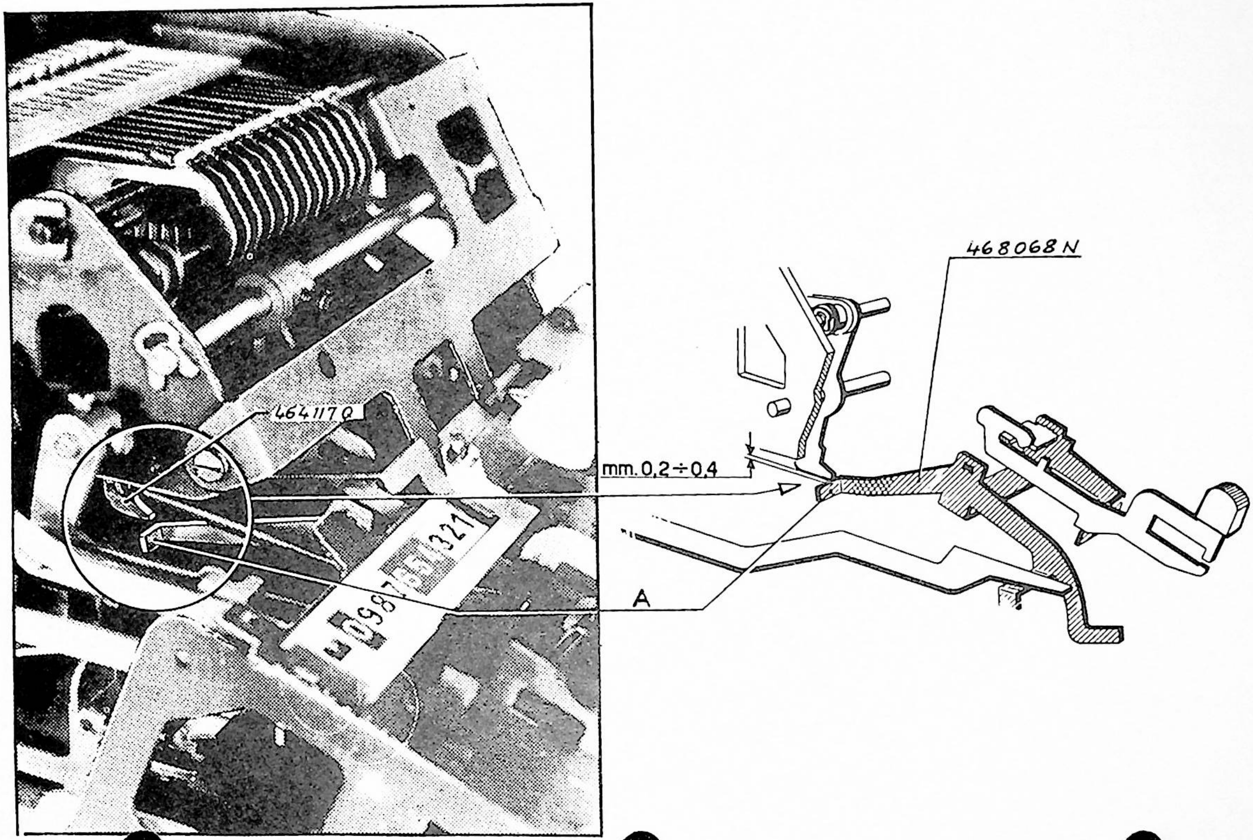
Unplug cord

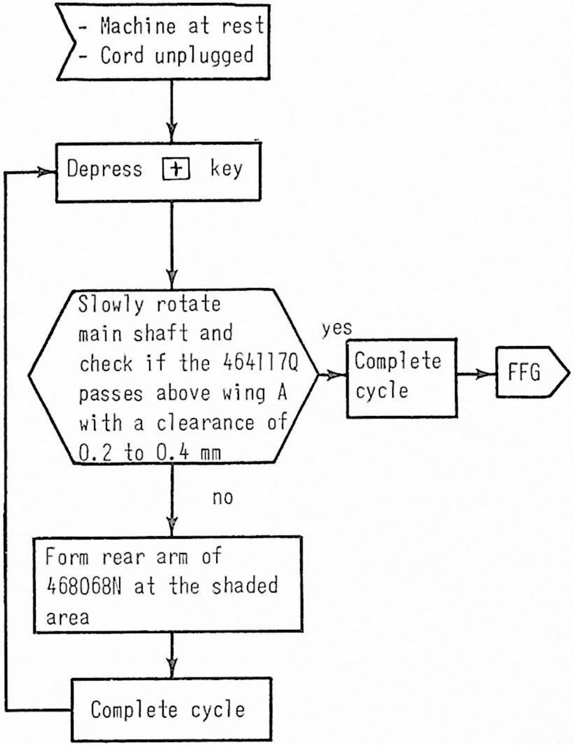
- Enter all 9's
- Depress the # key
- Rotate main shaft until universal bar is at top dead center

Act on wing D (fig. 1 and 2)

Plug cord in

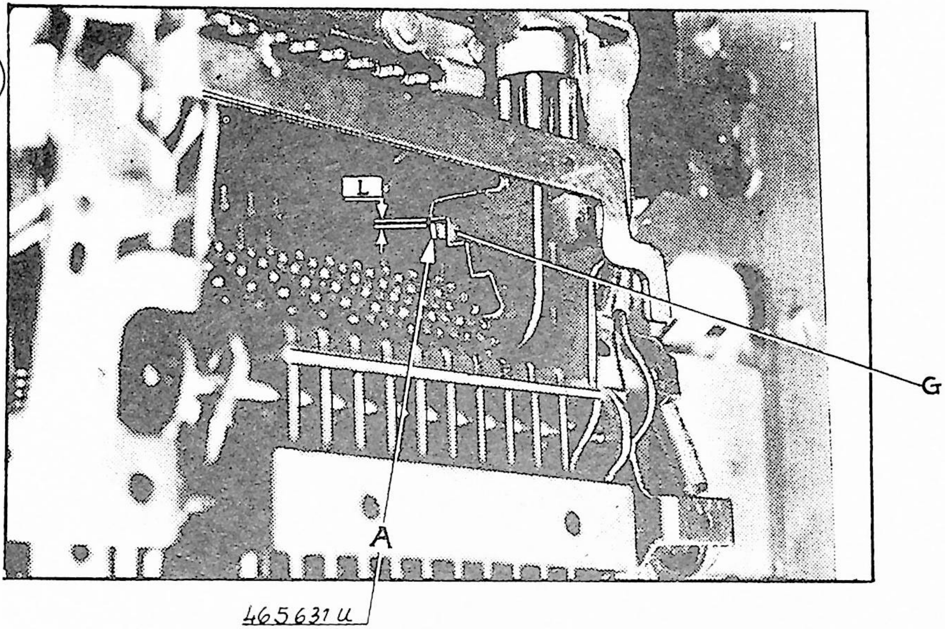
ADJUSTMENT OF NON-PRINT DURING A CLEAR CYCLE




- Machine at rest
- Cord unplugged
Depress + key
Slowly rotate main shaft and check if the 464117Q passes above wing A with a clearance of 0.2 to 0.4 mm
yes
Complete cycle
FFG
no
Form rear arm of 468068N at the shaded area
Complete cycle

MC20 M- SYMBOL SELECTION LINK 465696W ADJUSTMENT

①



- Machine at rest
- Cord unplugged

- Set REPEAT key "ON"
- Enter all 9's
- Input in memory
- Depress [#] key

Rotate main shaft until the universal bar is at top dead center

Between step G and wing A of bridge 465631U is a clearance of 0.2 to 0.4 mm (fig. 1)

yes

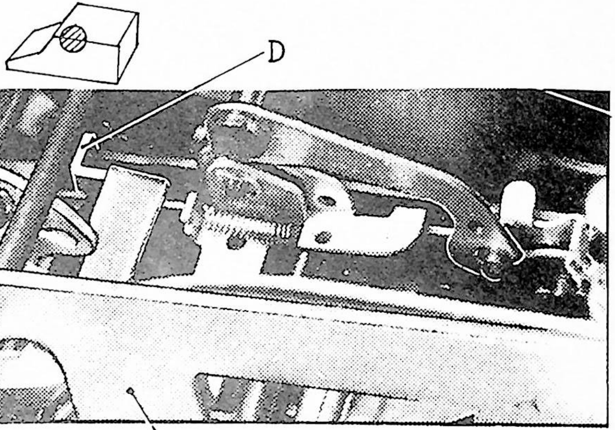
FFG

no

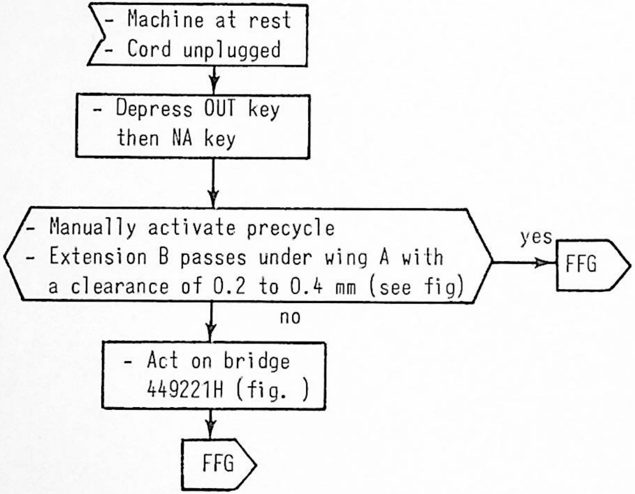
Act on wing D (fig. 2)

FFG

②



MC24 - DOUBLE LINESPACE CONTROL BRIDGE 449221Z ADJUSTMENT



- Machine at rest
- Cord unplugged

- Depress OUT key then NA key

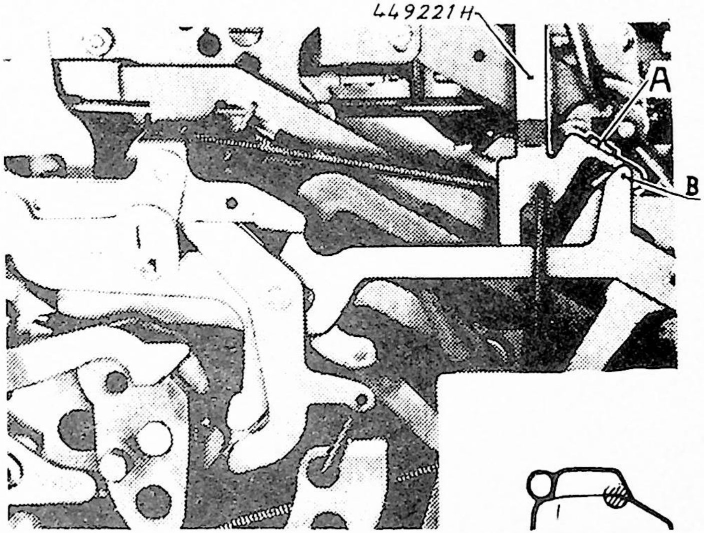
- Manually activate precycle
- Extension B passes under wing A with a clearance of 0.2 to 0.4 mm (see fig)

yes → FFG

no

- Act on bridge 449221H (fig.)

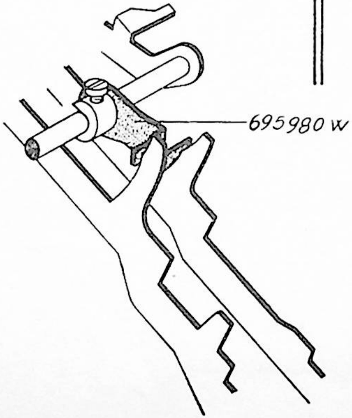
FFG

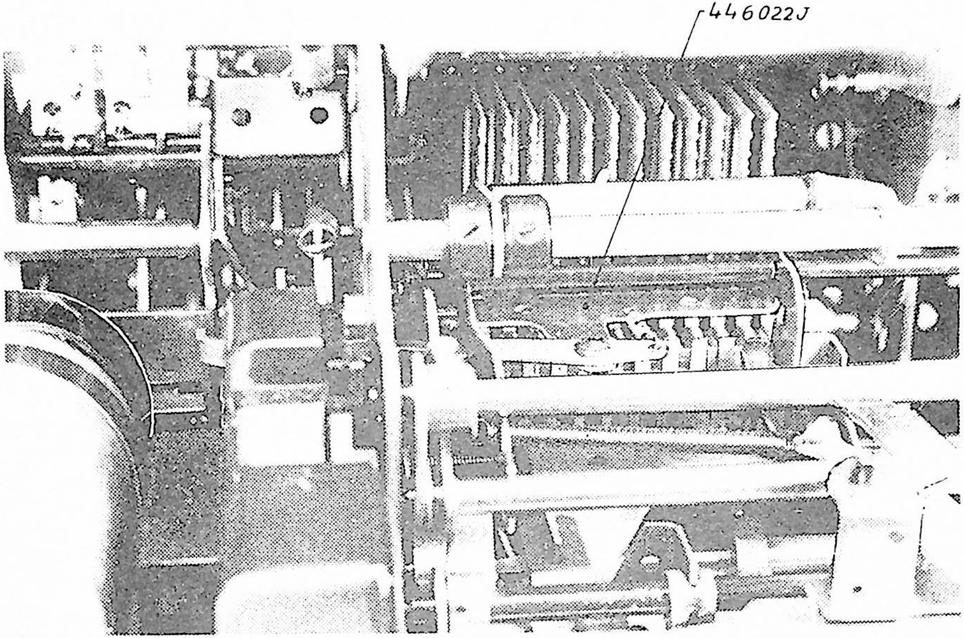


REPLACEMENT X

CALCULATION AND TOTAL SLIDERS CONTROL CRANK REPLACEMENT

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Loosen set screw of crank - Break off the extension that remains - Push the broken crank against the right frame (check that it does not interfere with the calculation slider)		- Replace the broken crank with the replacement version (695980W) and tighten the set screw friction tight	
		- Make check: Y7 (MC24) Y8 (MC26)	




446022J

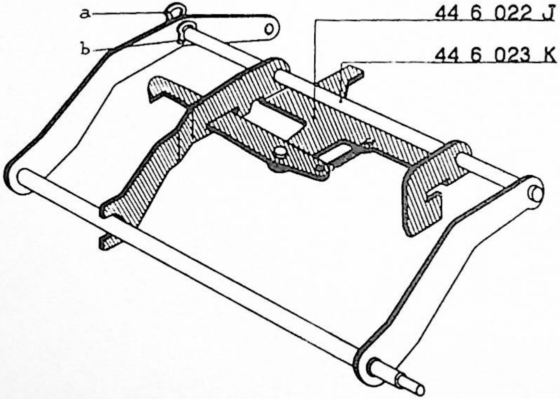
QUOTIENT COUNTER 446022J REPLACEMENT

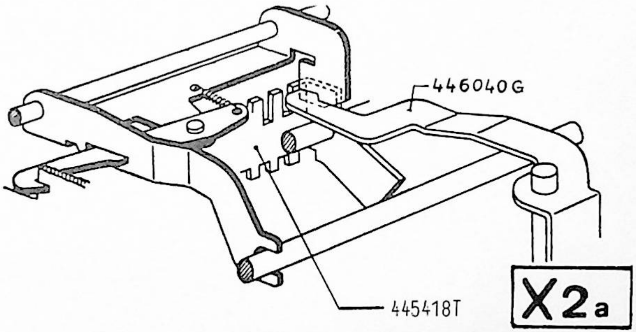
DISASSEMBLY

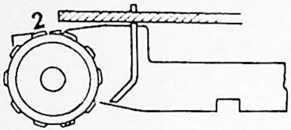
WHAT TO DO	HOW TO DO IT
Machine at rest	
- Remove shaft 446023K	- Remove retainers a and b
- Remove the quotient counter 446022J	- Remove shaft toward left

ASSEMBLY

WHAT TO DO	HOW TO DO IT
- Install new quotient counter 446022J	- Remove latch spring from old; transfer to new - Install new quotient counter between comb 445418T and arm of 446040G - Install shaft - Install retainer clips a, b
- Make check Y10	







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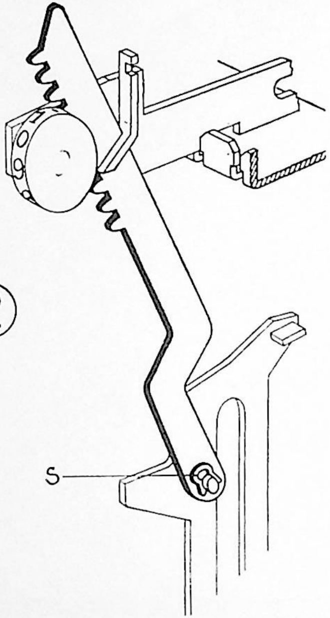

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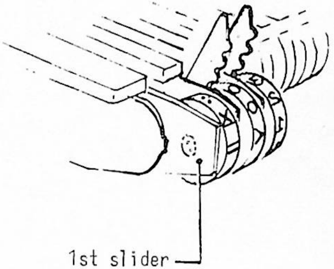
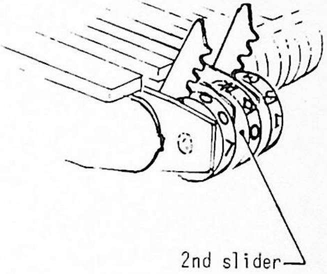


③



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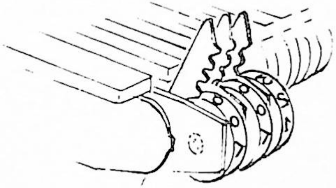


⑤

HOW TO INSTALL A PRINT RACK

(MC26 Remove paper cutter)

The print rack pertains to the symbols

no

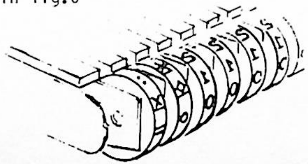
- Enter one 9 and as many zeros as necessary to get to the column corresponding to the missing print rack
- Depress the (NA) key and rotate knob until print trip occurs
- Rotate the loose print wheel to 2 as shown in fig. 1
- Insert rack, mesh it with the wheel, maneuver it downward until it can be positioned on the calculation rack stud (to facilitate this operation manually lower the memory racks)
- Install retainers (fig. 2)
- The wheels are properly timed when looking at them from above you see 002221 .....
  (wheel in concern)
- Complete the cycle (MC26 - install paper cutter)

yes

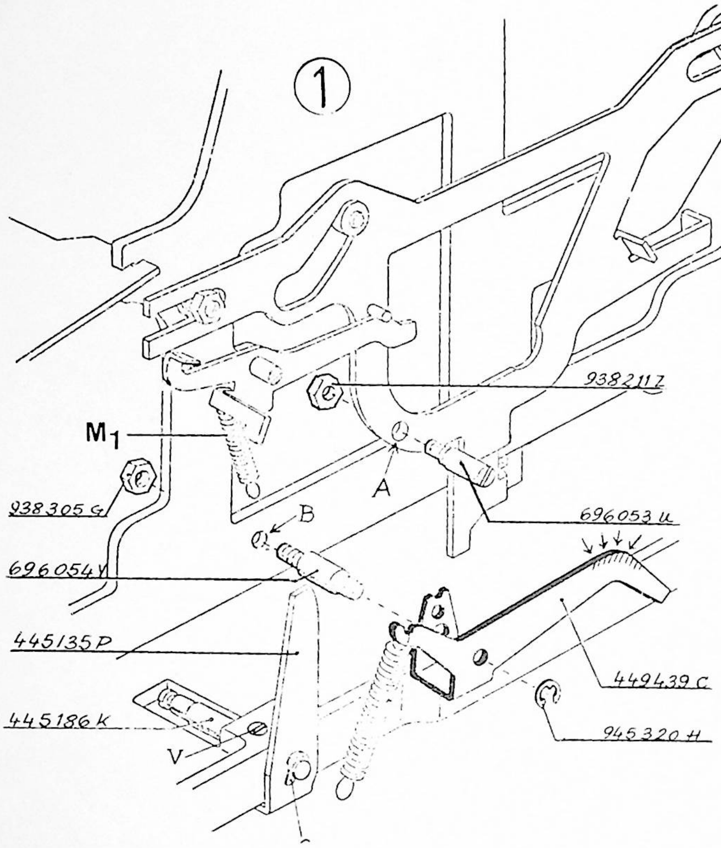
- Enter 1 and depress the (NA) key (non-add); rotate knob until print trip occurs
- If it concerns the first print slider (upper register) time wheel as illustrated in figure 3
- If it concerns the second print slider (lower register) time wheel as illustrated in figure 4
- Insert rack, mesh it with wheel, maneuver it downward until it can be positioned on the symbol rack stud (to facilitate this operation manually lower the memory racks)
- Install retainers (fig. 2)
- The wheels are properly timed if they are as shown in fig. 5
- Complete cycle (MC26 - install paper cutter)

With the machine at rest the wheels must be as shown in fig.6

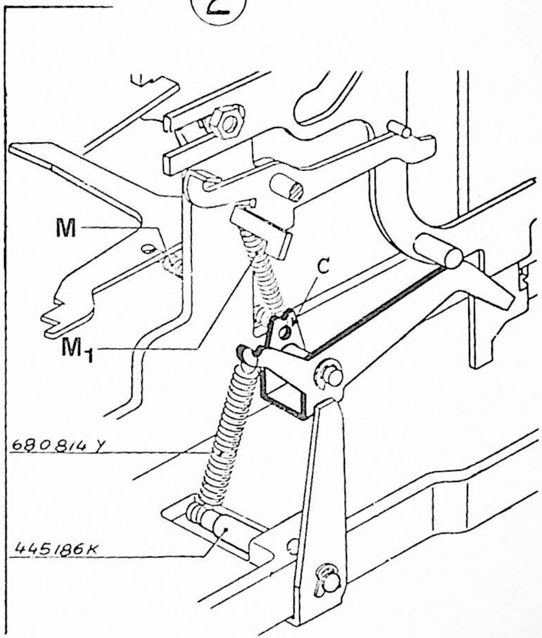
⑥



①


938211Z
M1
938305G
A
696053U
B
696054Y
445135P
449439C
445186K
V
945320H

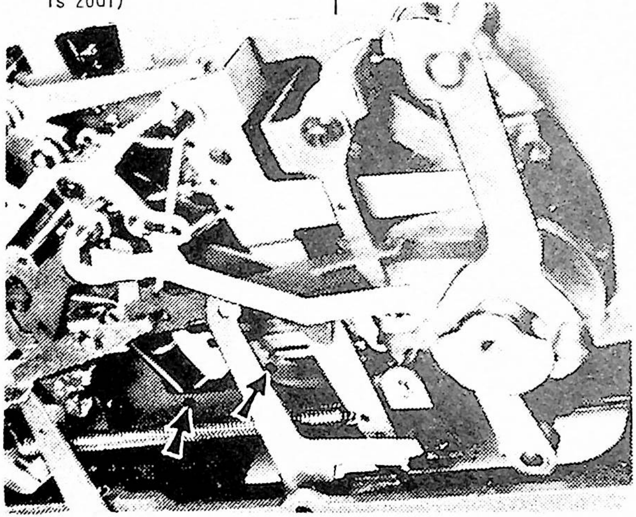
②


M
M1
C
680814Y
445186K

MC26 - HOW TO INSTALL POSITIONER 449439C

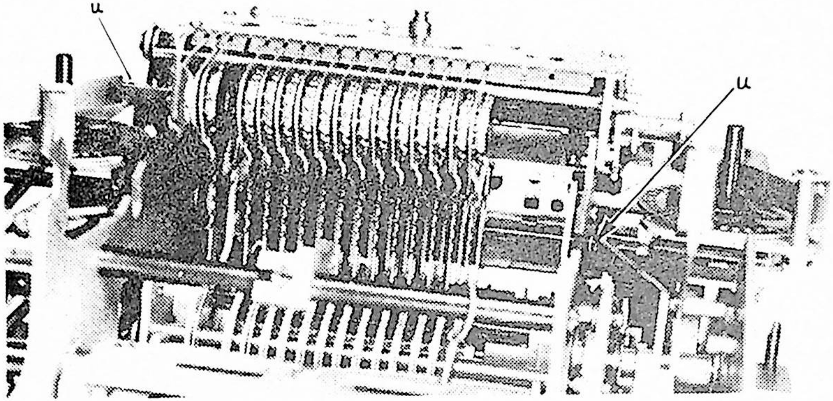
DISASSEMBLY

WHAT TO DO	HOW TO DO IT
- Remove stud 445186K (fig. 1)	- Remove retainer s - Loosen screw V - Push stud 445186K into machine to release bridge 445135P
Disengage spring M fig.2 (and spring M 1 if machine is 26GT)	



ASSEMBLY

WHAT TO DO	HOW TO DO IT
- Mount in hole A stud 696053U; fasten with nut 938211Z (fig. 1)	
- Mount positioner 449439C (fig. 1) - Mount the new stud with groove (fig. 2)	- Install stud 696054V in hole B; fasten with nut 938305G - Mount positioner 449439C and fasten with retainer 945320H
- Position bridge 445135P and fasten with retainer s	- Bring bridge 445135P towards the right then tighten screw V (check that it has a slight axial play before tightening screw V)
- Engage spring M in hole C (and for 26 GT substitute spring M 1 in hole C of detent fig.2) - Hook positioner spring 680814Y to stud 445186K (fig. 2) - If necessary remove any burrs (in area indicated with arrows in fig. 1) on positioner 449439C. Apply grease to same area and on stud 696053U	



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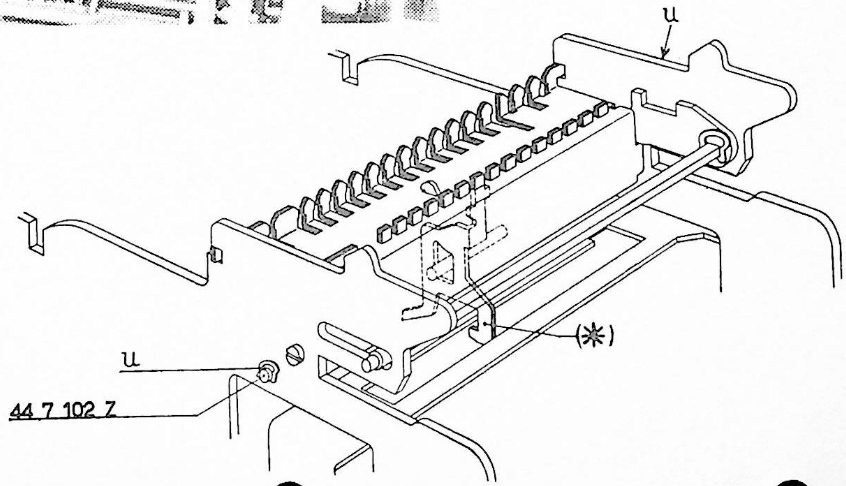
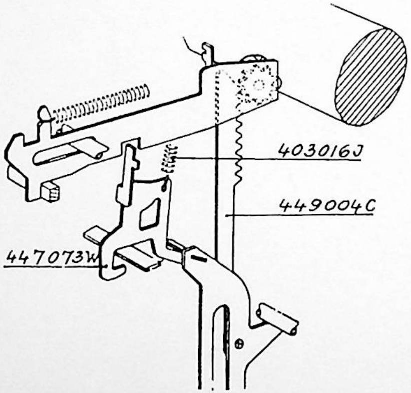


MC26 - PRINT LATCH REPLACEMENT

DISASSEMBLY

WHAT TO DO	HOW TO DO IT
- Make disassembly on page 9 of NOTES section - Remove rack 449004C corresponding to jammed print latch 447073W (fig. 1) - Unhook spring of print latch 403016J (fig. 1)	
- Remove shaft 447102Z	- Remove retainer U (fig. 2) (that is the one closer to the defective latch)
- Remove defective print latch 447073W	



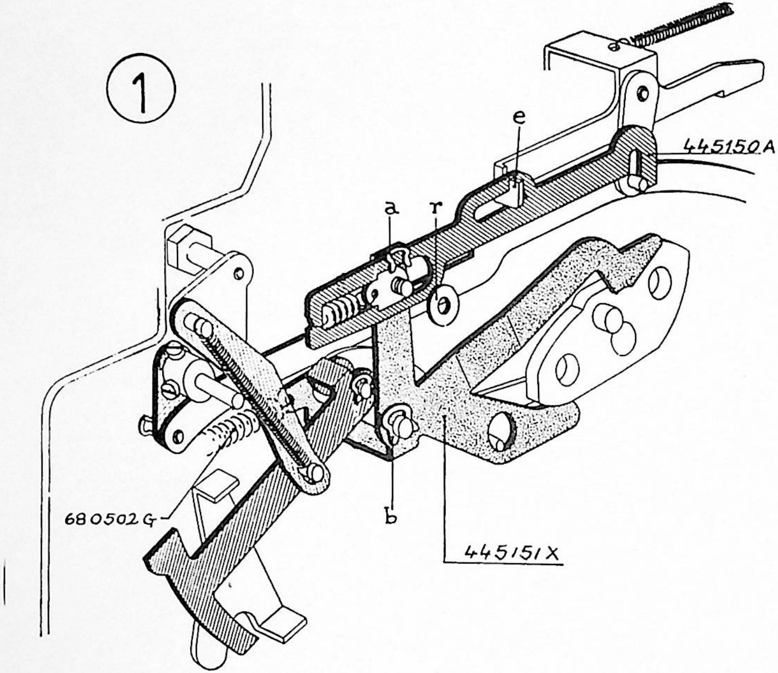
①

ASSEMBLY

WHAT TO DO	HOW TO DO IT
- Install a new print latch (*)	- Properly position it and if necessary lower the adjacent latch
- Hook spring 403016J (fig. 1) to it - Install rack 449004C (fig. 1) see X3 - Make the assembly on page 9 of the NOTES section - Make check Y12	

(*)	- 447073W	Print latch for numeral print sliders and upper register symbol print slider
	- 447076Z	Print latch for lower register symbol print slider
	- 482268A	Print latch for X symbol slider

①



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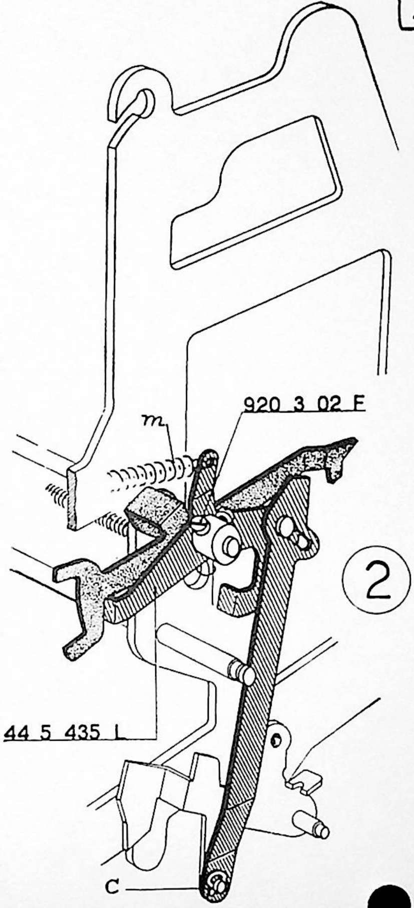
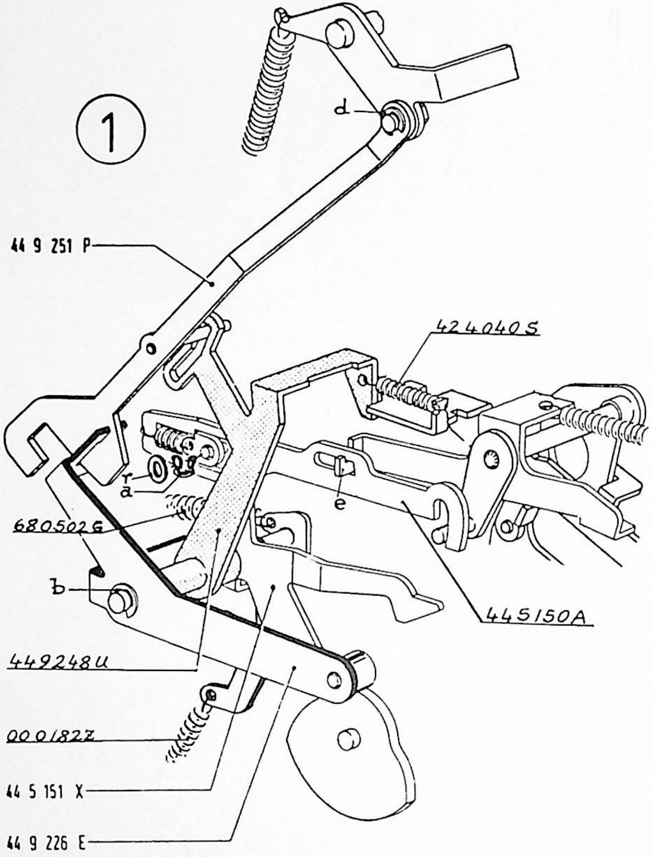


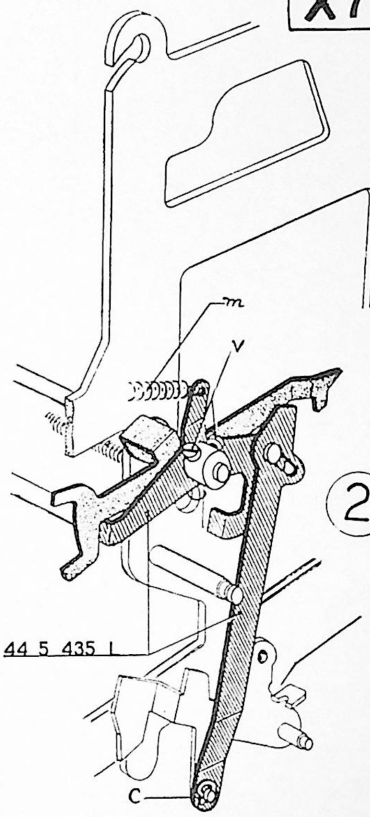
MC24 - MULTIPLICATION STOP PLUNGER 445435L REPLACEMENT

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Remove hook 445150A (fig. 1)	- Remove retainer a and washer r - Rotate hook 445150A upward then disengage from e	- Install new plunger 445435L	- Install it as shown in fig. 2
- Remove bridge 445151X (fig. 1)	- Remove retainer b - Unhook spring 680502G - Partially remove bridge 445151X - Rotate bridge 445151X counter-clockwise until crank 445437L (fig. 2) can be seen, then remove bridge	- Install bridge 445151X (fig. 1)	
- Remove plunger 445435L (fig. 2)	- Unhook spring m from plunger 445435L - Remove retainer c - Loosen set screws 920302F - Remove plunger 445435L	- Install hook 445150A (fig. 1)	- Install retainer b (fig. 1) and hook spring 680502G - Install washer r and retainer a - Hook spring m (fig. 2)
		- Make check Y20	

①


d
44 9 251 P
424040S
r
a
680502G
e
b
445150A
449248U
000182Z
44 5 151 X
44 9 226 E

②


m
v
44 5 435 L
c

MC26 - PLUNGER 445435L REPLACEMENT

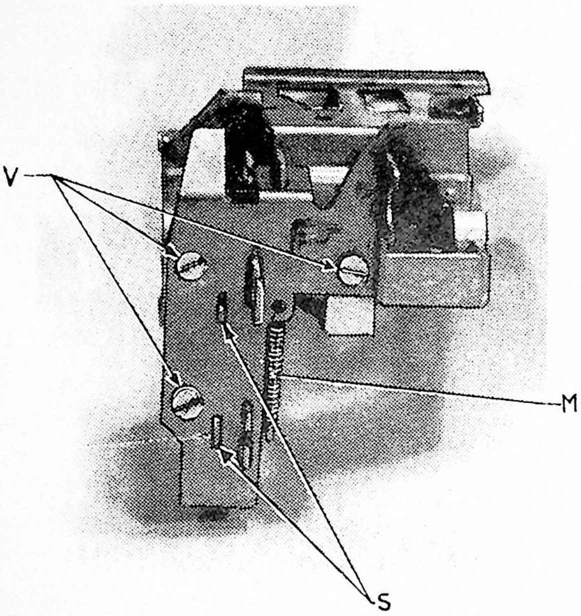
DISASSEMBLY

WHAT TO DO	HOW TO DO IT
- Remove hook 445150A (fig. 1)	- Remove retainer b and d - Unhook springs 424040S and 000182Z - Remove retainer a and washer r - Unhook spring 680502G - Move bridge 449226E outward - Rotate hook 445150A counter-clockwise and disengage from e
- Remove bridges 449226E, 449248U, 445151X and link 449251P (fig. 1)	
- Remove plunger 445435L (fig. 2)	- Remove retainer c - Loosen screws V - Unhook spring m - Remove plunger 445435L

ASSEMBLY

WHAT TO DO	HOW TO DO IT
- Install new plunger 445435L (fig. 2)	- Install new plunger 445435L - Install retainer c - Hook spring m
- Install hook 445150A (fig. 1)	- Install on the shaft bridges 445151X, 449248U, 449226E (fig. 1) - Install hook 445150A onto wing e - Position hook 445150A on stud of bridge 445151X - Install washer r and retainer a
- Install link 449251P (fig. 1) - Position bridges 449248U, 449226E and 445151X (fig. 1) - Install retainers b and d (fig. 1) - Hook springs 424040S and 000182Z (fig. 1) - Hook spring 680502G (fig. 1)	
- Make check Y20	

①



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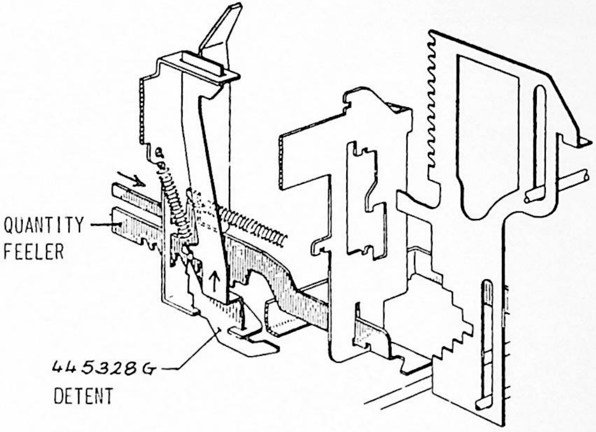


QUANTITY FEELER DETENT 445328G REPLACEMENT

DISASSEMBLY

WHAT TO DO

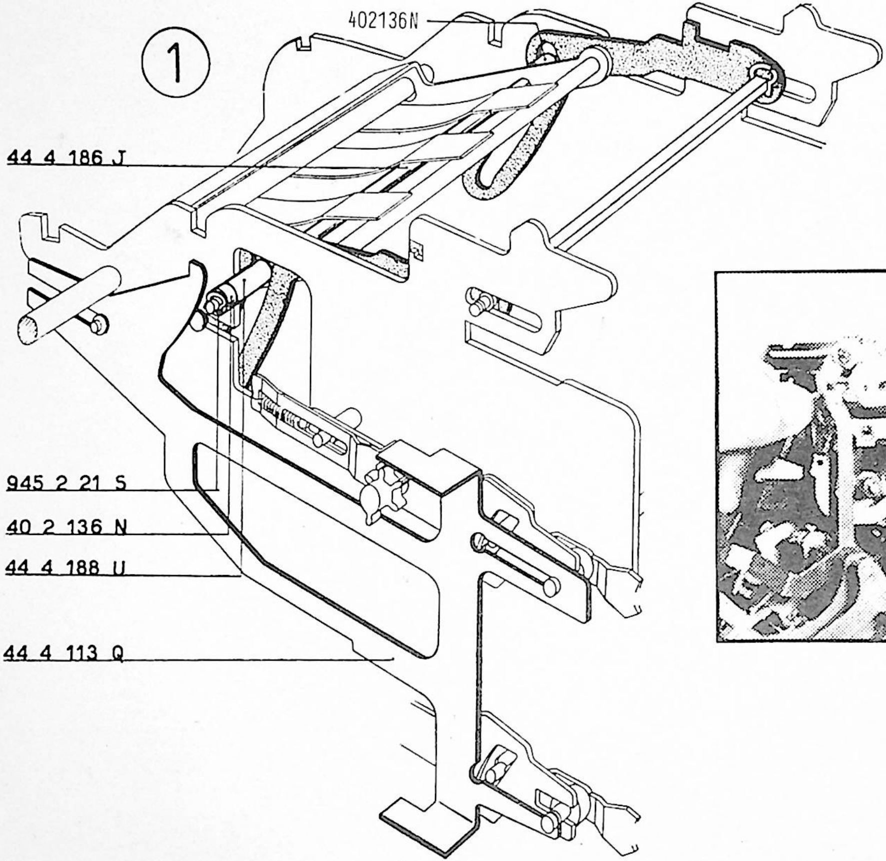
- Enter 555, then depress the $\boxed{\times}$ key
- Unplug cord
- Enter a digit and depress the $\boxed{=}$ key
- Rotate knob until the quantity feeler is released
- Loosen (without removing them) the 3 screws V and unhook spring M
- Remove the quantity feeler from its guide (fig. 2) and move it in manner to disengage it from its detent
- Remove the detent (fig. 2)

ASSEMBLY

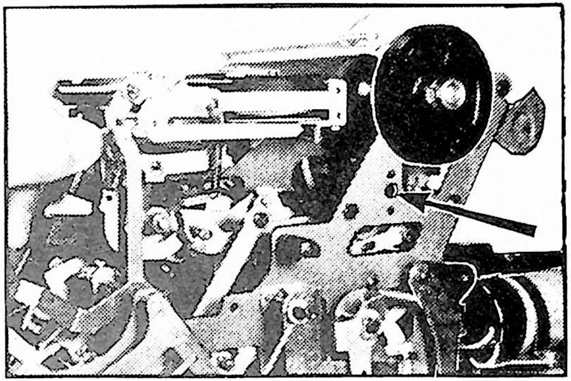
WHAT TO DO

- Install new detent 445328G
- Install everything in reverse order of disassembly (Check also that feeler S [fig. 1] is in the proper slot)
- when completed plug cord in

①

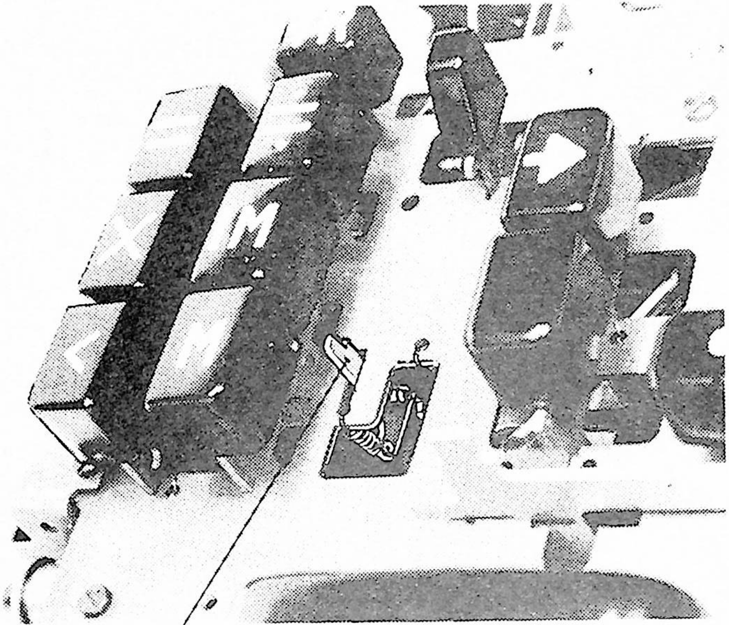


②



MC24 - REGISTER INVERSION COMMAND ROLLER SHAFT 444186J REPLACEMENT

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Remove shaft 444186J	- Depress the NA key - Rotate main shaft until shaft 444186J is at top dead center - Push plate 444113Q rearward - Remove retainer 945221S, roller 402136N and spacer 444188U - Push shaft 444186J toward the right - Remove retainer and right roller 402136N - Rotate main shaft until shaft 444186J is aligned with the hole drilled on the right frame (indicated with arrow) (fig. 2) - Remove shaft 444186J through the hole	- Installation of new shaft 444186J	- Install shaft - Install right roller 402136N and fasten with retainer - Push plate 444113Q rearward - Push shaft 444186J completely toward the left - Install spacer 444188U - Install left roller 402136N and fasten with retainer - Complete cycle

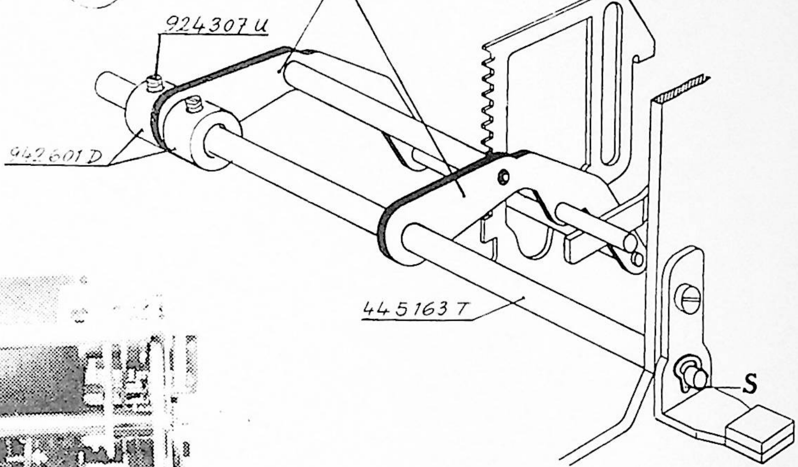


445013Q

MC24 - MEMORY INPUT KEYSTEM LATCH 445013Q REPLACEMENT

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Remove the keyboard cover plate	- Remove the two round keytops, the rubber gasket and 4 screws	- Remove spring from old latch and install it on the new latch	
- Unhook the keystem latch spring from keyboard plate		- Hold (IN) keystem up (at rest)	
- Remove latch from (IN) keystem	- Depress the (IN) key - Rotate latch towards the front until it is out of relative slot, then remove from stud	- Insert the latch, lower the (IN) key, install latch on its stud	
		- Rotate latch until it is inserted in the upper slot	
		- Hook spring to keyboard plate	
		- Install keyboard cover plate	

②



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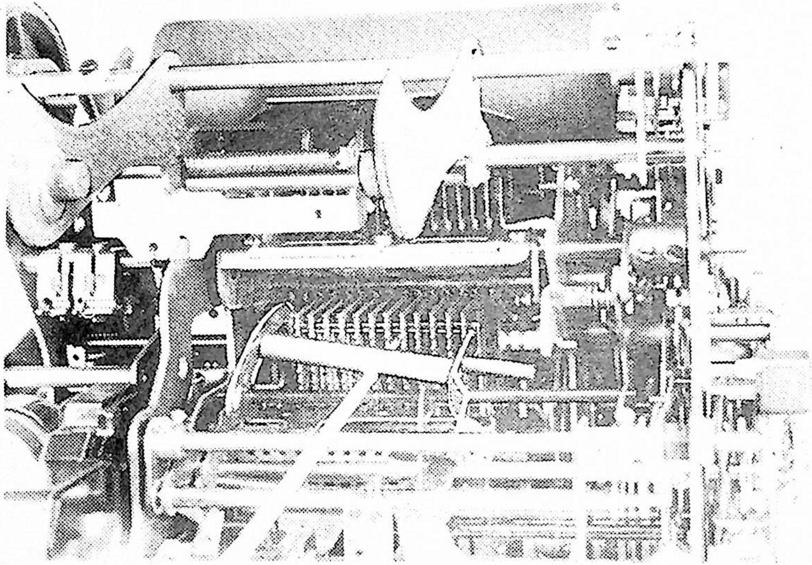


MC24 - MEMORY CLEAR FRAME 445160C REPLACEMENT

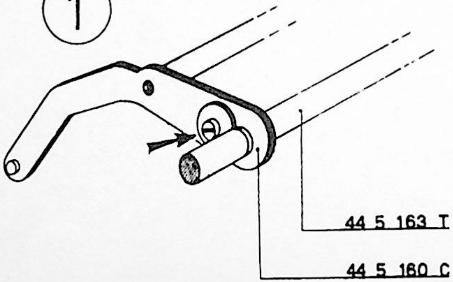
DISASSEMBLY

WHAT TO DO	HOW TO DO IT
- Remove shaft 445163T	- Move memory rack to top dead center - Remove retainer S (fig. 2) and, depending on the type of machine, screw and washer (fig. 1) or loosen two collars (fig. 2)
- Remove frame 445160C	- Flex frame arms to release the clear bail that works inside the memory racks - Leave the clearing bail inside the memory racks

ASSEMBLY

WHAT TO DO	HOW TO DO IT
- Install the new frame 445160C	- Raise the clearing bail that is inside the memory racks and hold it as shown in fig. 3 - Insert one end of the clearing bail in the hole of one arm of the new frame - As you hold it in this position flex the other arm (with former) and snap the clearing bail in the hole of the other arm
- Install shaft 445163T	- Install the two collars 942601D as in fig. 2; mount shaft from left side, then install retainer S
- Center the frame in respect to memory racks	- Center the frame and fasten the two collars leaving a slight axial play

①



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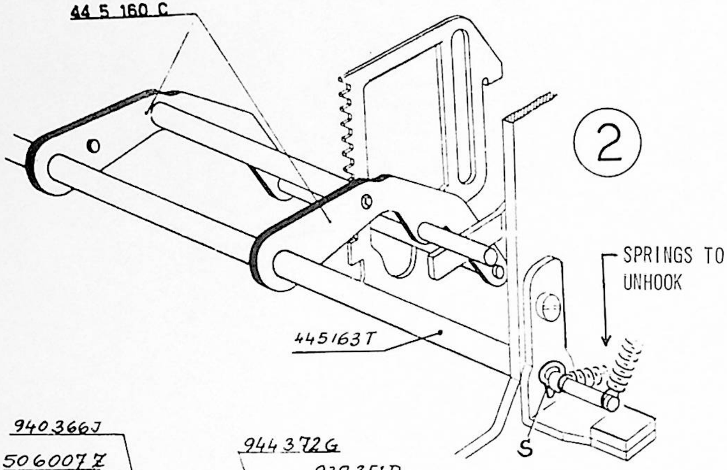
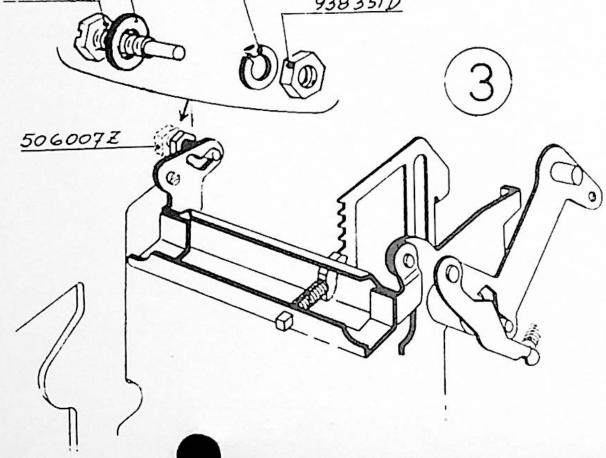
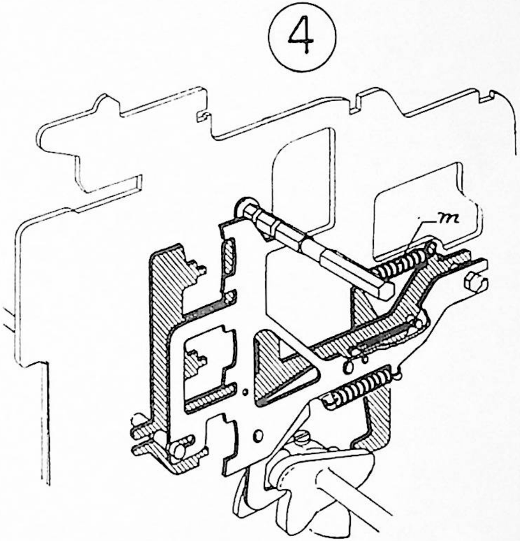

44 5 160 C
445163T
SPRINGS TO UNHOOK
S

③


940366J
506007Z
944372G
938351D
506007Z

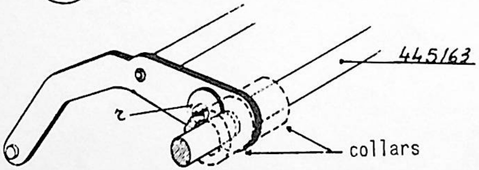
④


m

STUD SCREW 506007Z REPLACEMENT

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Remove shaft 445163T	- Remove retainer S and (for the MC26) the springs (fig. 2) - Depending on the type of machine; washer r or two collars (fig. 1)	- Install new stud screw 506007Z	- Install stud screw with washer through side frame, install nut friction tight in center of slot (fig. 3)
		Make check Y34	
- Remove stud screw 506007Z	- Push memory racks all way down - Unhook spring m (fig. 4) - Remove stud screw 506007Z and its lock nut (fig. 3)	- Hook spring m (fig. 4) - Install shaft 445163T	- Insert shaft from left side; install washer or collars (fig. 1 - 2) - Install retainer S - Center frame 445160C, in respect to memory racks, with collars, leaving a slight axial play - MC26 - Hook the springs to end of shaft (fig. 2)

①



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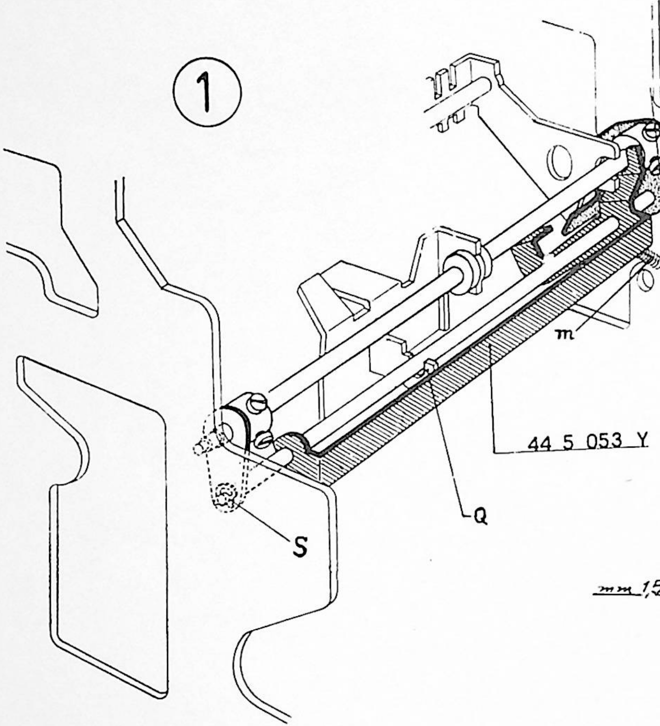

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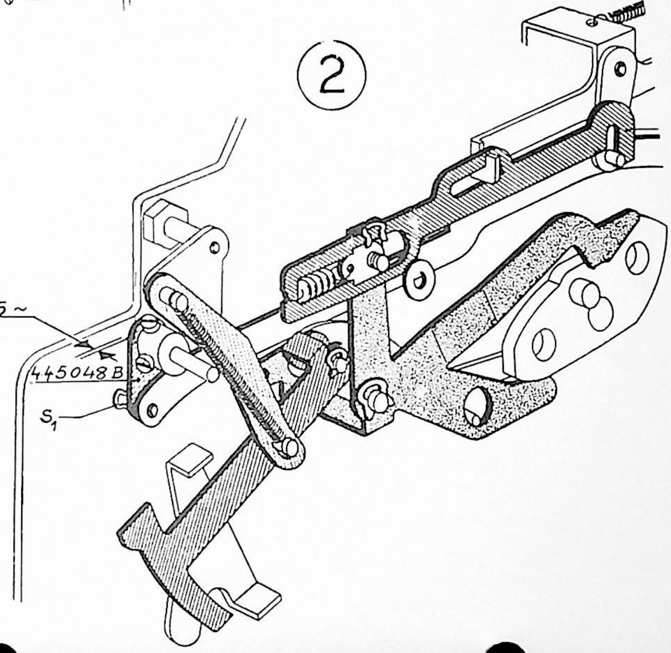
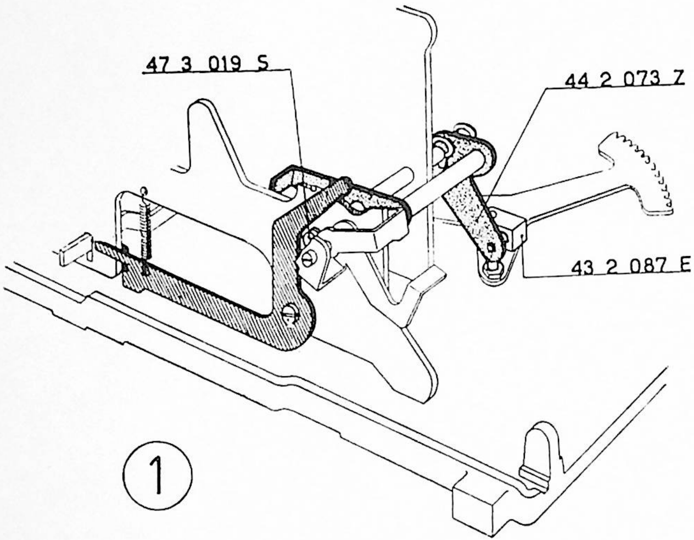


MULTIPLICATION STOP CONTROL BRIDGE 445053Y REPLACEMENT

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Remove bridge 445053Y	- Machine at rest - Depress = key - Remove retainer S and unhook spring m (fig. 1) - Remove retainer S_1 (fig. 2) - Loosen crank 445048B; remove shaft and free bridge 445053Y	- Install the new bridge 445053Y	- Reassemble by reversing the disassembly procedure (the shaft must pass through notch Q of the quality feeler) (fig. 1)
		- Fasten crank 445048B (after paralleling it with the others on shaft 445049C) and at a distance of approx. 1.5 mm from sidewall	
		- Make check Y40	



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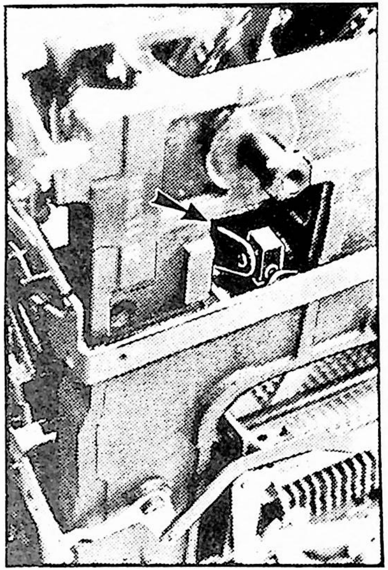

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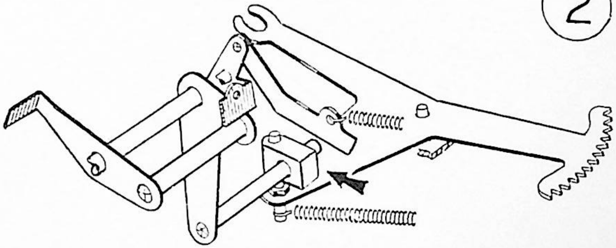
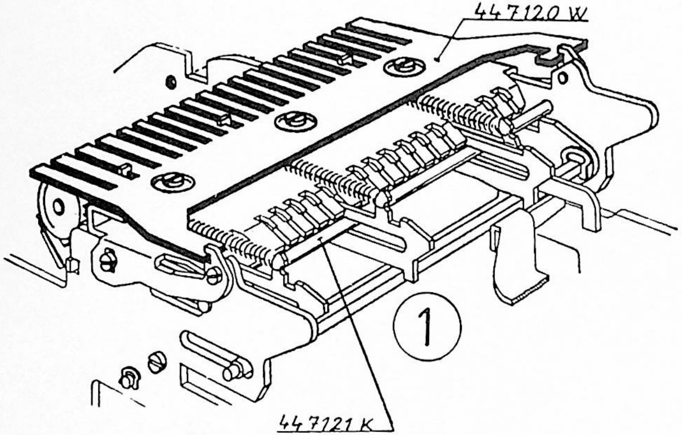
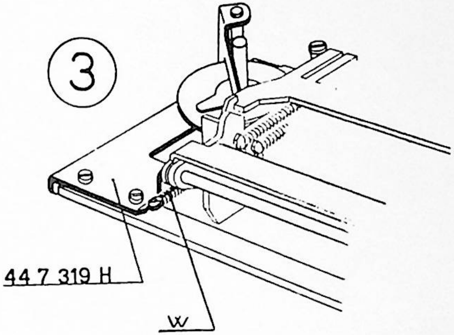
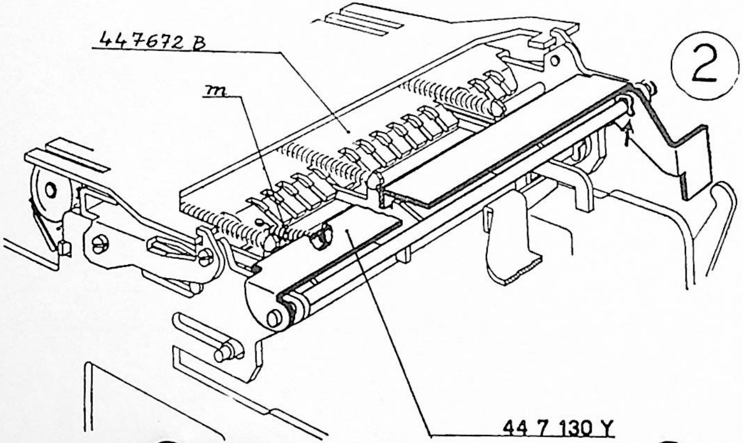


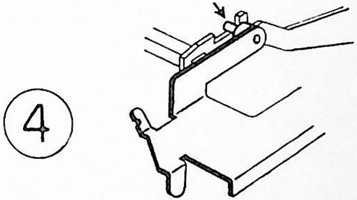
STOP SECTION RESTORING FRAME 442073Z REPLACEMENT

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Remove shaft 473019S (fig. 1)	- Remove all 4 springclips	- Install the new frame 442073Z	- Temporarily rest it against the internal frame without threading it all the way through
- Remove frame 442073Z (fig. 1)	- Remove block 432087E		- Install block 432087E on the stud of the arm and then on the stud of the sector as in fig. 2
			- Replace all 4 springclips
		- Install shaft 473019S	


447120 W
①
447121 K


③
44 7 319 H
W

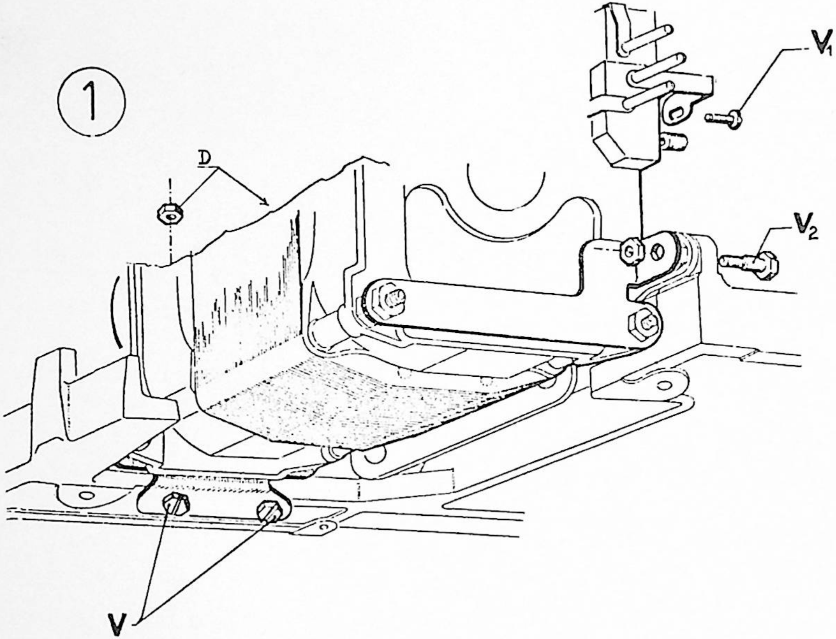

447672 B
m
②
44 7 130 Y

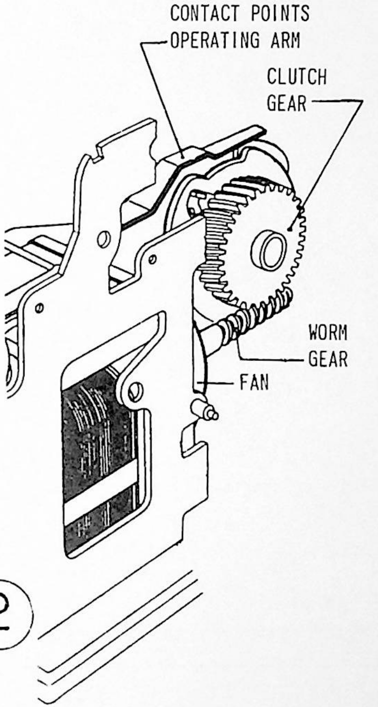

④

MC24 - PRINT SLIDER REPLACEMENT

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Free the print slider guide comb 447120W (fig. 1)	- Remove the three screws, but do not move the comb	- Install the new print slider (*)	- Position the print slider: Insert the print rack in a manner to have the wheel timed (the wheels viewed from above must be this way: :* 22222.....)
		- Install shaft 447121K (fig. 1)	
- Remove bridge 447130Y (fig. 2)	- Unhook spring m - Remove the retainer clip on inside, then remove the shaft	- Install the ribbon spool support	- Screws and spring W. The support studs must be as shown in fig. 4
		- Install bridge 447130Y (fig. 2)	- Shaft and retainer
- Remove the left ribbon spool support (fig. 3)	- Remove the screws and unhook spring W (fig. 3)	- Install the spring anchor plate 447672B (fig. 2)	- Screw in middle of slot. Hook the print slider springs and spring of bridge 447130Y
- Remove the spring anchor plate 447672B (fig. 2)	- Remove the four screws and unhook the print slider springs	- Install the print slider guide comb 447120W (fig. 1)	- Tighten screws friction tight in middle of slot - Enter twelve digits, depress the ⊞ key; then rotate the knob until the print sliders are released
- Remove shaft 447121K up to the print slider to be removed	- Remove the print sliders guide comb		
		(*) - 447380B Numeral print slider	- Check freeness of print sliders (move comb if necessary)
		- 447981J Upper register symbols print slider	- Tighten screws - Complete cycle
		- 447982K Lower register symbols print slider	- Install ribbon - Plug cord in and set repeat
		- 447105T Numeral print slider with C credit balance symbol	- Enter twelve 5's and depress the (NA) key several times - Check on feet impression (If necessary adjust guide comb in height, fig. 2)

①


D
V1
V2
V


CONTACT POINTS
OPERATING ARM
CLUTCH
GEAR
WORM
GEAR
FAN

②

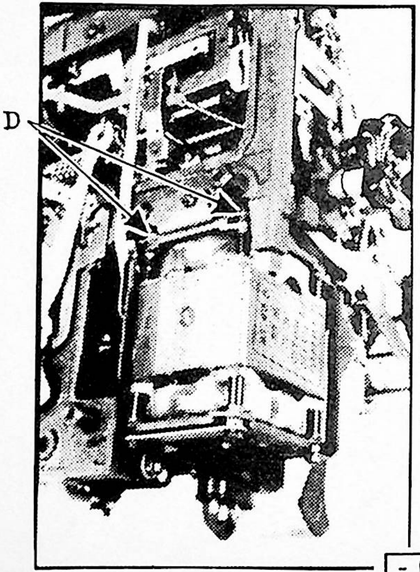
INDUCTION MOTOR REPLACEMENT

DISASSEMBLY

WHAT TO DO

Remove motor:

- Remove screws V_1 and V_2 (fig. 1)
- Remove two screws V (and corresponding nuts) fig. 1



③

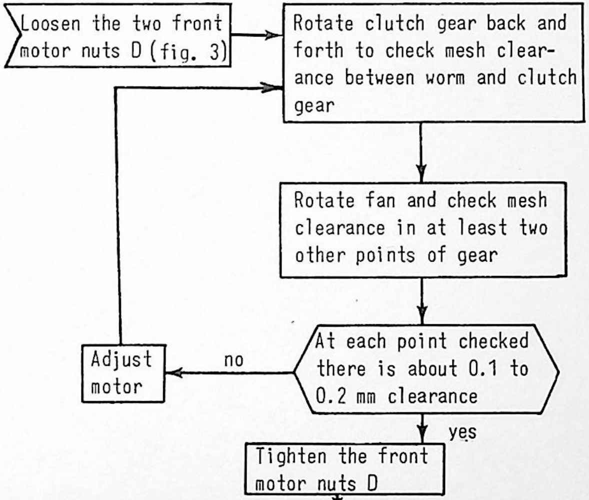
ASSEMBLY

WHAT TO DO

Install motor:

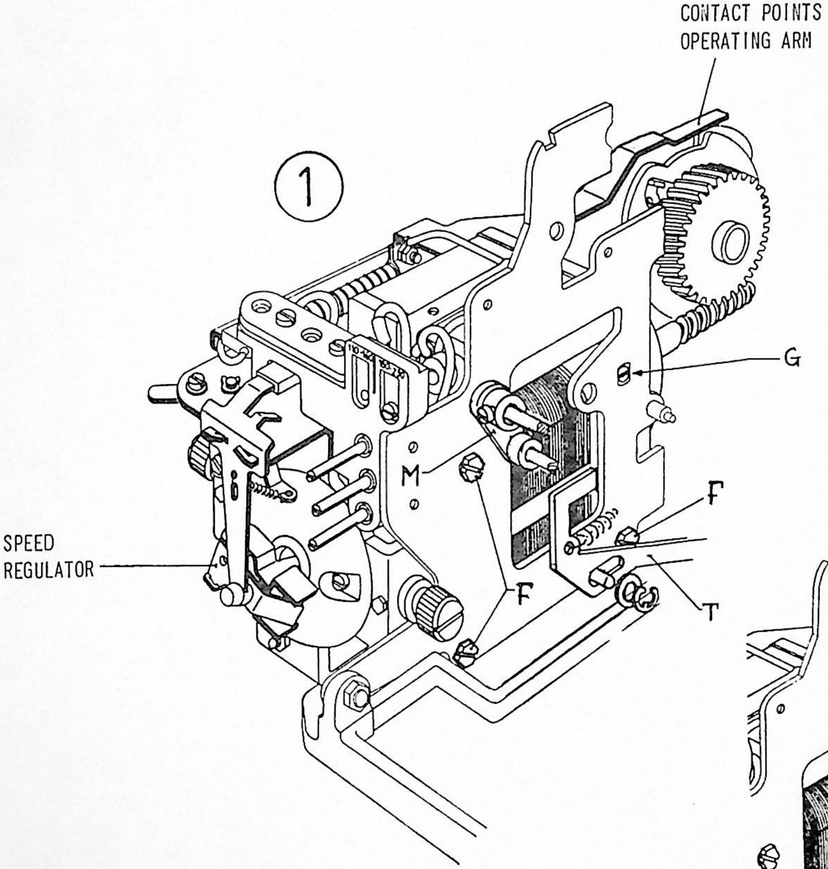
- Install screws V and relative nuts. Tighten
- Install and tighten screws V_2 and V_1 (after installing ground wire if on an MC26)

Mesh adjustment of worm with clutch gear (only to be done when motor is replaced)

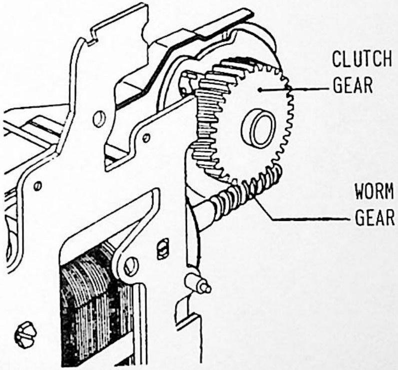

Loosen the two front motor nuts D (fig. 3)
Rotate clutch gear back and forth to check mesh clearance between worm and clutch gear
Rotate fan and check mesh clearance in at least two other points of gear
At each point checked there is about 0.1 to 0.2 mm clearance
no
Adjust motor
yes
Tighten the front motor nuts D

- Check that the contact points when open (at rest) have a clearance of 0.4 to 0.6 mm (Form the contact points operating arm if necessary) - FFG

①


CONTACT POINTS OPERATING ARM
G
M
F
F
T
SPEED REGULATOR

②


CLUTCH GEAR
WORM GEAR

BRUSH TYPE MOTOR REPLACEMENT

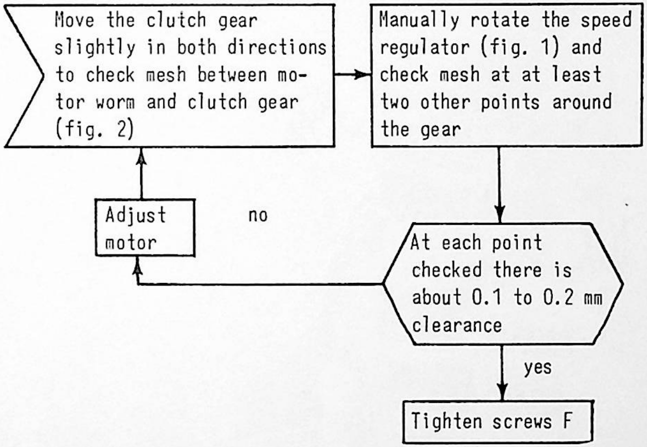
DISASSEMBLY

WHAT TO DO

- Enter 90; depress the $\boxed{X}$ key and make one cycle
- Enter 1; depress the $\boxed{=}$ key, then rotate the main shaft about 90° to have crank M out of the way of screw F
- Remove retainer and washer of link T
- Remove the three screws F and remove motor

ASSEMBLY

WHAT TO DO	HOW TO DO IT
- Install the new motor	- Install motor as illustrated (screw G in middle of slot); then tighten screws F
- Install link T, washer and retainer - Complete cycle by hand	



Move the clutch gear slightly in both directions to check mesh between motor worm and clutch gear (fig. 2)

Manually rotate the speed regulator (fig. 1) and check mesh at at least two other points around the gear

At each point checked there is about 0.1 to 0.2 mm clearance

no

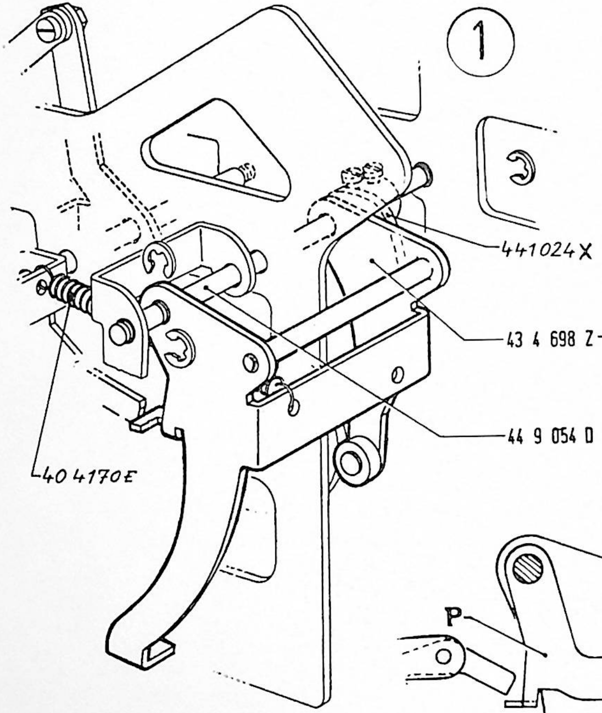
Adjust motor

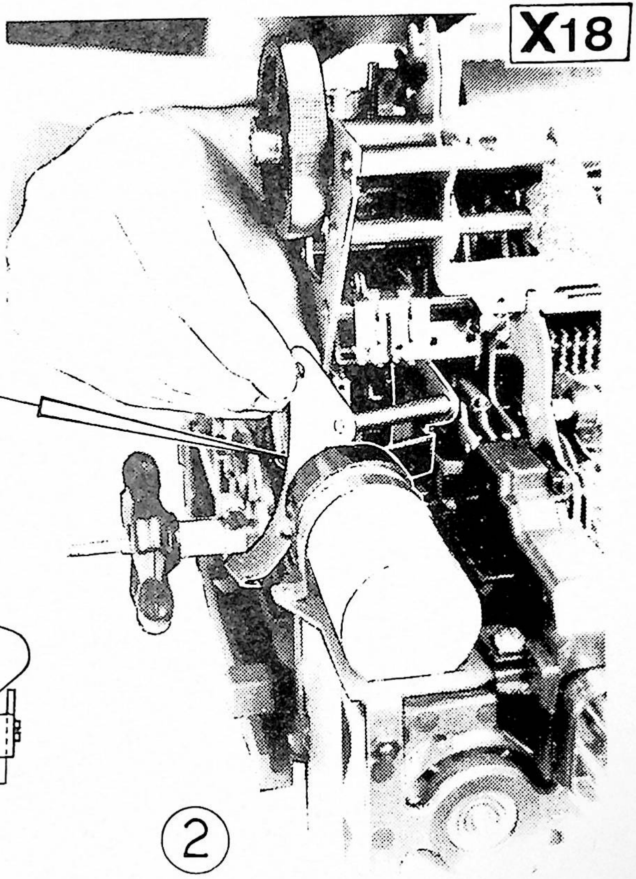
yes

Tighten screws F

- Check that the contact points have a clearance of 0.4 to 0.6 mm when open. (If necessary adjust the contact points operating arm)
  Make check Y67

①





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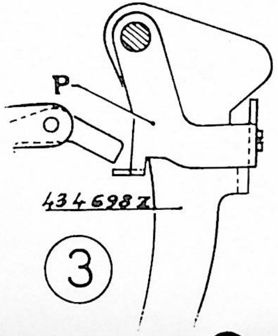


③

PRECYCLE PLATE ACTUATING BRIDGE 434698Z REPLACEMENT

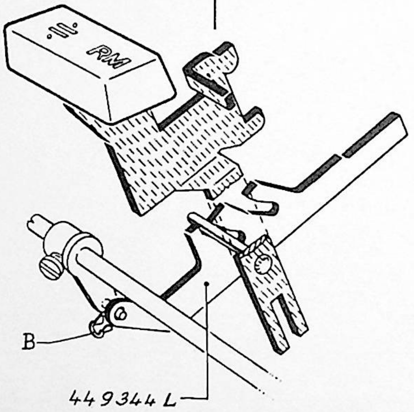
DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Remove bridge 434698Z (fig. 1)	- Unhook spring 404170E (fig. 1) - Remove the six retainer clips from shaft 449054D (fig. 1) and probable washer alongside the most inner retainer - Loosen the two set screws of 441024X (fig. 1) - Remove shaft 449054D (fig. 1) - Remove bridge 434698Z (Without starting any cycles or modifying other conditions, incline the bridge as shown in figure 2 and remove the bridge following the possible path of the roller)	- If plate P (fig. 3) is mounted on old bridge 434698Z substitute shaft 449054D for existing one - Install a new bridge 434698Z	- Install bridge 434698Z - Install shaft 449054D (fig. 1) - Install the 6 retainers and washer (if removed) on shaft 449054D (fig. 1) - Hook spring 404170E (fig. 1) - Center the two arms of 449024X on the cam following the procedure of W8

MC26 - SLIDER 449344L REPLACEMENT

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
Machine at rest:			
- Remove slider 449344L	- Remove retainer B (fig. 1) - Move slider 449344L toward the right; then remove	- Install a new slider 449344L (Check that it has chamfer S indicated in fig. 2)	- Insert it in the rear guide (following the removal procedure in reverse)

Explain to operator that the ÷RM key must not be held down after it is depressed

①



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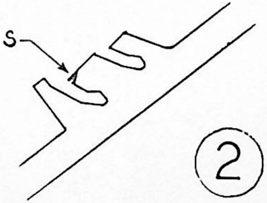
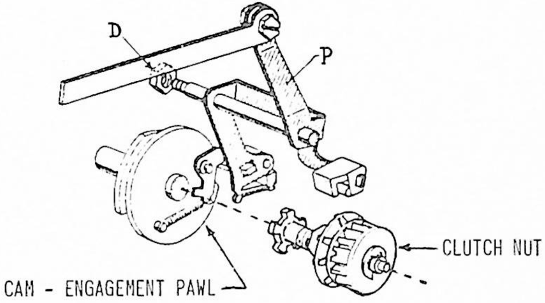


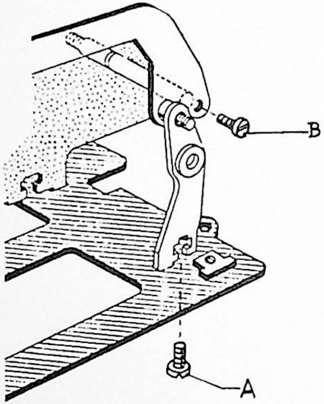
PARTS REPLACEMENT
MC-20 - MC-23

↓

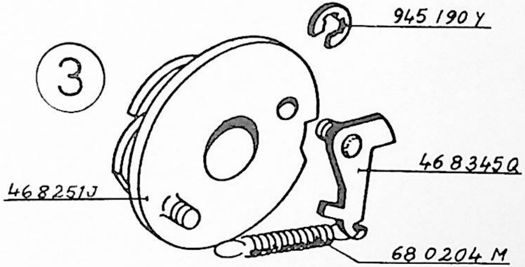
②


D
P
CLUTCH NUT
CAM - ENGAGEMENT PAWL

①


B
A

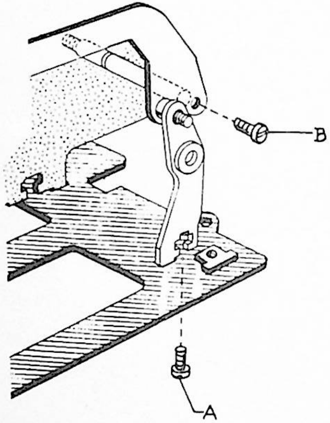
③


945 190 Y
468345Q
468251J
680204 M

CAM - ENGAGEMENT PAWL UNIT REPLACEMENT

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Remove motor	See X27	Install a new cam-engagement pawl unit	Install an engagement pawl 468345Q on cam 468251J with retainer and spring (fig. 3); then install the cam on the shaft
- Remove the clutch unit	- Remove screw A (for MC20/Q also screw B) (fig. 1) - Flex frame to remove clutch unit		
- Unscrew nut D (fig. 2)		- Install nut D	
- Hold bridge P rotated, then remove the cam - engaging pawl unit (fig. 2)	Loosen the cam screws	- Install the clutch unit - Install screw A (and for the MC20/Q also screw B) - Install motor X27	
		- Make check Y77	

①



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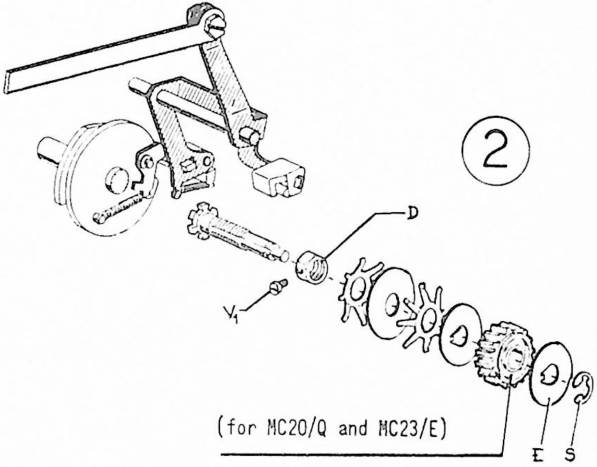
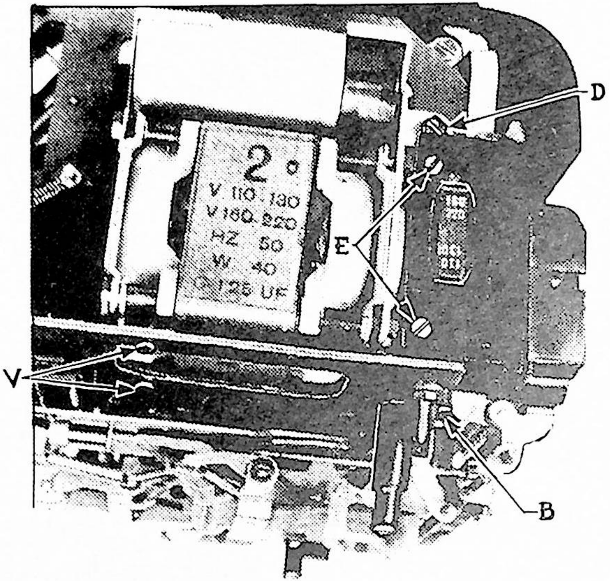


(for MC20/Q and MC23/E)

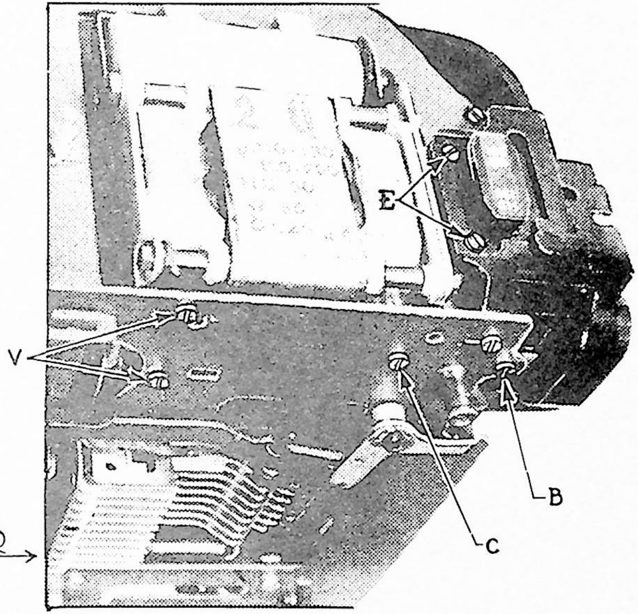
(for MC20/E and MC20/M)

CLUTCH FIBER GEAR REPLACEMENT

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Disassembly of clutch unit	- Remove motor X27 - Remove screw A (for MC20/Q remove also screw B, fig. 1) - Flex frame in manner to remove the clutch unit (fig. 2)	- Install clutch unit	- Install disc E and fasten with retainer S (fig. 2) - Install nut D without setting screw V_1 (fig. 2) - Install unit between frame and cam - Fasten screw A (fig. 1) (For the MC20/Q install also screw B and tighten) - Install motor X27
- Replace fiber gear	- Loosen screw V_1 and nut D (fig. 2) - Remove retainer S and disc E - Replace the fiber gear		- Make adjustment Y79



MC20/M - MC20/E - MC23 ↑



MC20/Q →

REPLACING THE MOTOR

DISASSEMBLY		ASSEMBLY	
WHAT TO DO		WHAT TO DO	
MC20/M - MC20/E - MC23: - Remove screws V and B under the motor - Remove screw D MC20/Q: - Remove screws V - B - C - Remove the prong block screws E		- Reverse the disassembly procedure	

NOTES

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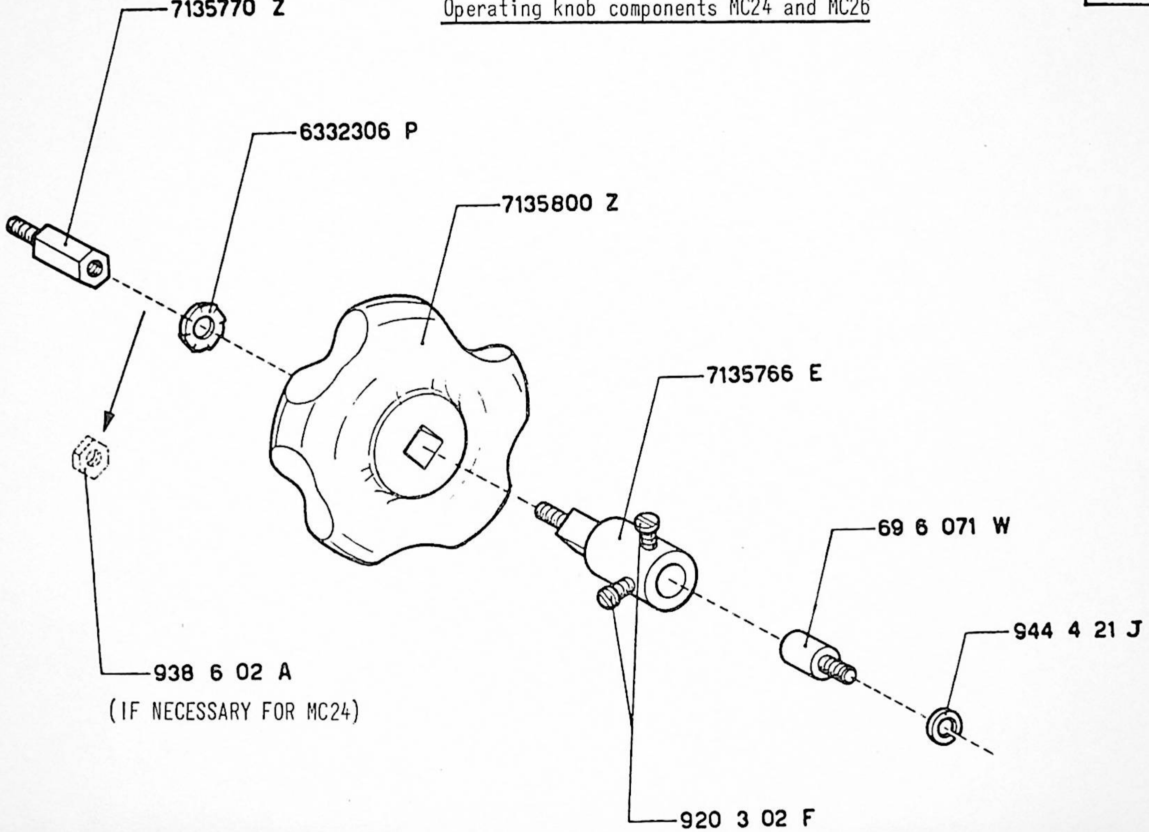
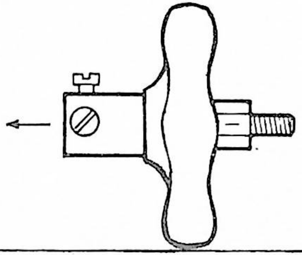
Operating knob components MC24 and MC26



OPERATING KNOBS FOR MC24 AND MC26 (for MC20 and MC23 refer to page 11 of the NOTES)

MC24

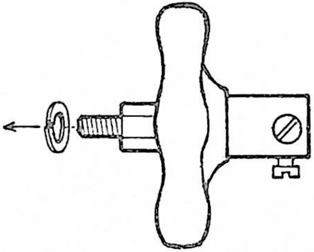
- The knob is installed and firmly attached to main shaft



①

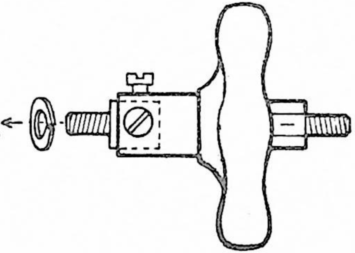
MC26

- If the main shaft has a right hand threaded hole, turn knob as illustrated in figure 2

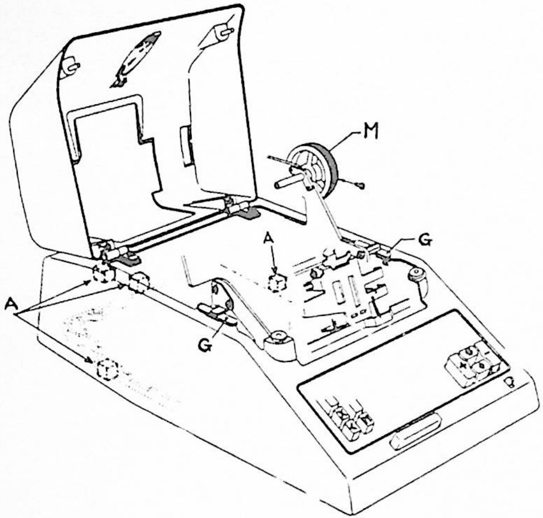


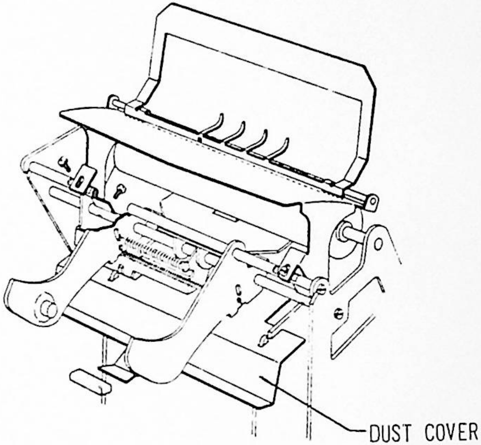
②

- If the main shaft has a left hand threaded hole; install insert in knob, fasten with two set screws, then install knob on main shaft turned as illustrated in figure 3



③

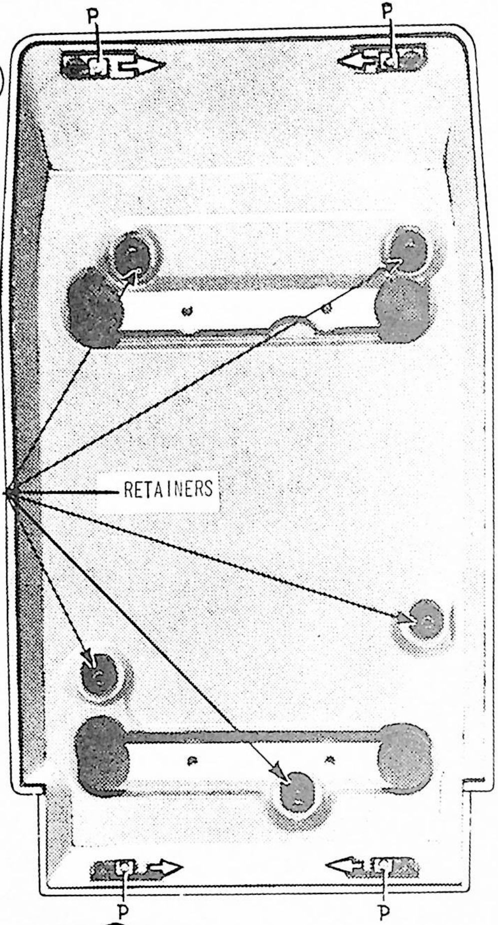

M
A
G
A
G


DUST COVER

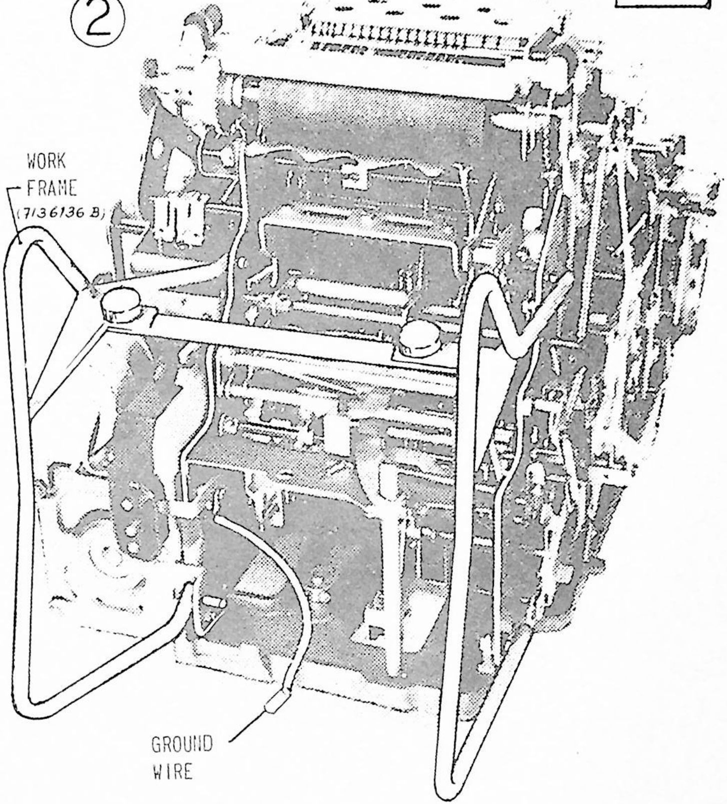
MC24 - PRELIMINARY OPERATIONS

Remove casing:	- Remove power cord - Remove paper roll - Remove platen knob M - Rotate fasteners G outward - Remove casing - Remove rear dust cover
Install platen knob:	- Install platen knob; tighten set screws
(If necessary) Remove bottom pan:	- Remove bottom pan
Remove 4 rubber supports A Remove keyboard cover plate	- Remove keyboard gasket 4 screws 2 round keytops and then keyboard cover plate

①



②

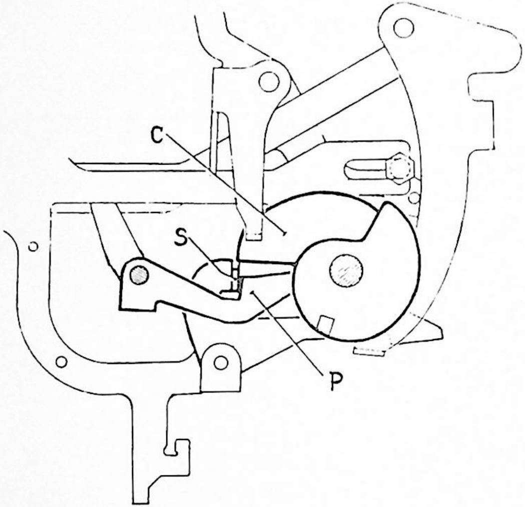


MC26 - PRELIMINARY OPERATIONS

Remove casing:	- Remove cord - Remove paper roll (moving paper cutter frontward) - Move (in the direction of the arrow, fig. 1) the four latches P - Remove casing
Install platen knob:	- Before installing the operating knob, check direction of thread in hole of main shaft
(If necessary) Remove bottom pan:	- Disconnect the ground wire by pulling it rearward - Remove the 5 retainers (indicated in fig. 1); then remove the bottom pan
Remove paper tear plate:	- Disengage spring and remove 2 retaining clips
Install work frame 7136136B:	- Refer to fig. 2

4

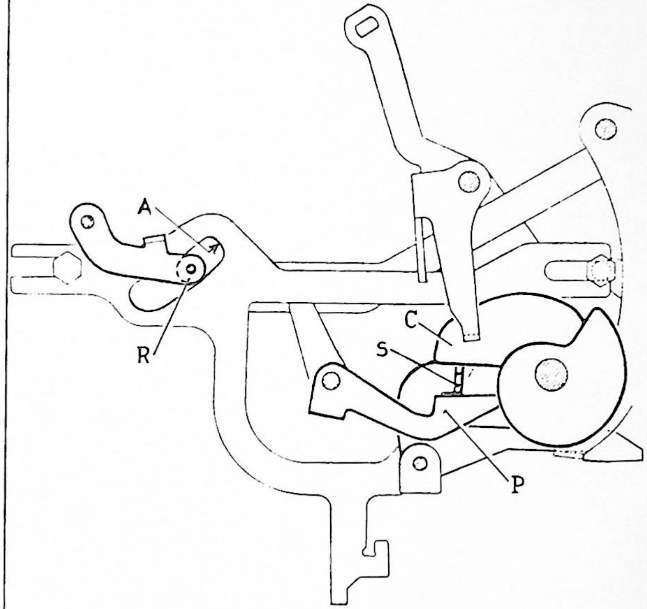
Main shaft at rest



- The main shaft is at rest when cam C is in the position shown in the figure above and wing S is engaged by bridge P and the keys are at rest

5

Precycle

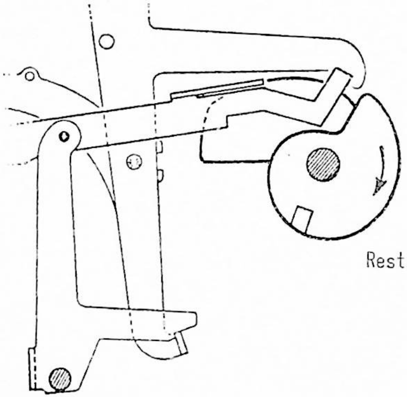


- The machine is in precycle phase - when roller R is not in contact with upper surface A (Cam C must always be at rest position as in 4 but with wing S disengaged from bridge P)

MC24 - MC26 - MACHINE CONDITION

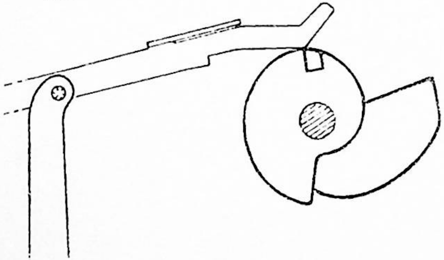
Machine in ADVANCE PHASE

①



Rest position

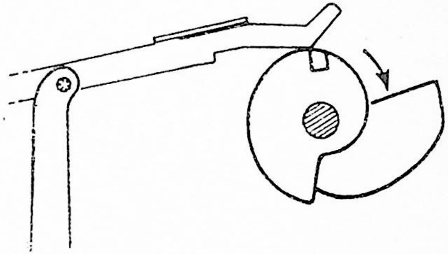
②



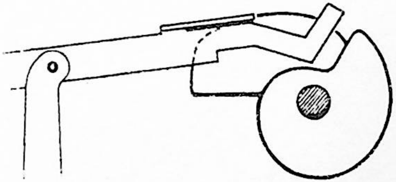
- Any position of the cam between the rest position and position illustrated in fig. 2 corresponds to the ADVANCE PHASE

Machine in RETURN PHASE

①



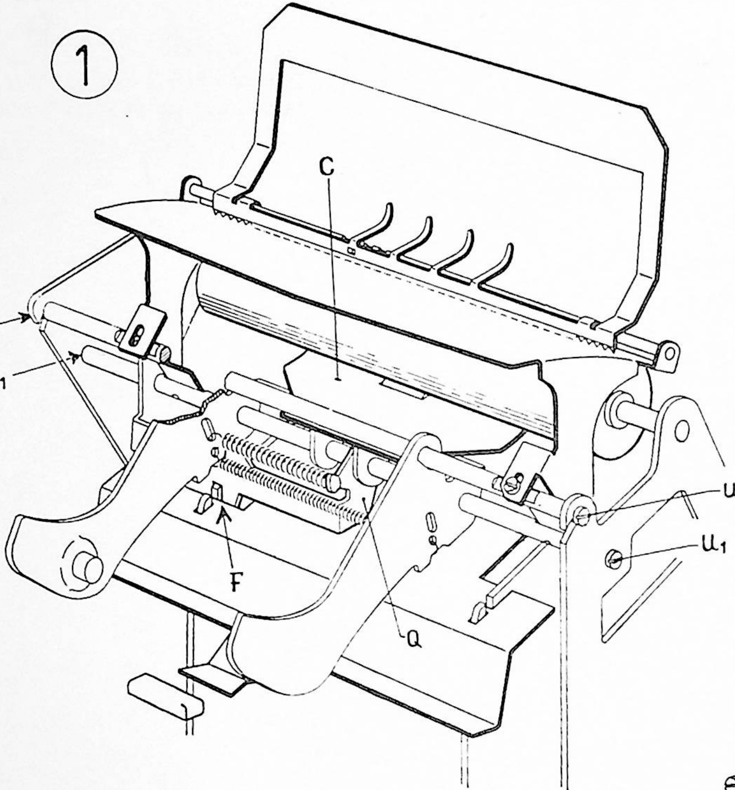
②



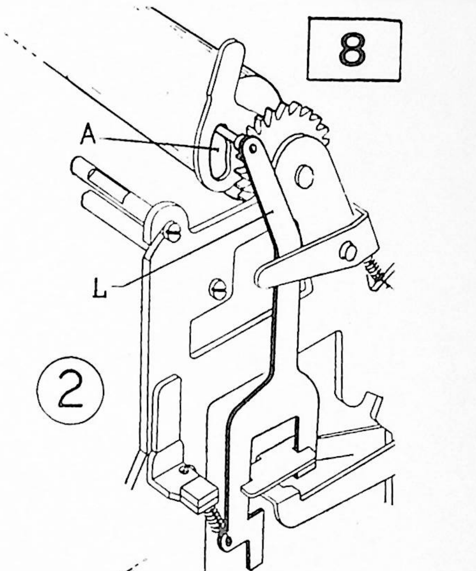
Rest position

- Any position of the cam between the position shown in fig. 1 and rest position (fig. 2) corresponds to the RETURN PHASE

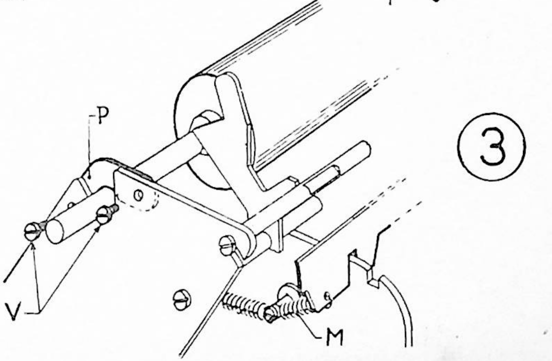
①



②



③

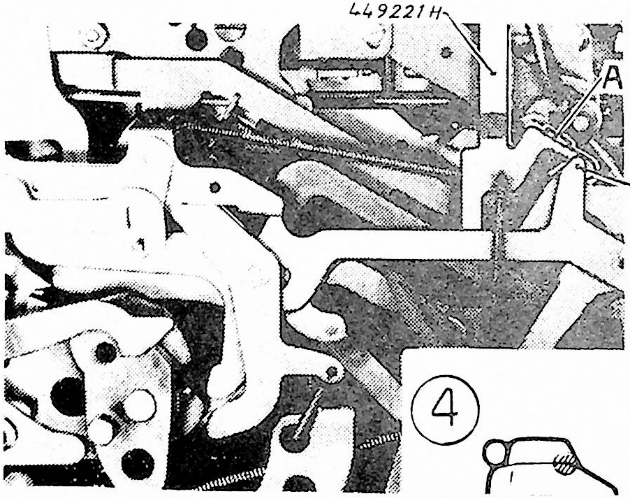


MC24 - PLATEN AND PAPER ROLL HOLDER DISASSEMBLY

DISASSEMBLY

WHAT TO DO

- Loosen screws U and remove screws U1 (fig. 1)
- Unhook spring M (fig. 3)
- Remove the stud of the line space lever L from slot A (fig. 2)
- Remove one screw V and loosen the other of retainer P (fig. 3)
- Remove platen, paper roll holder and paper pan C (fig. 1)



④

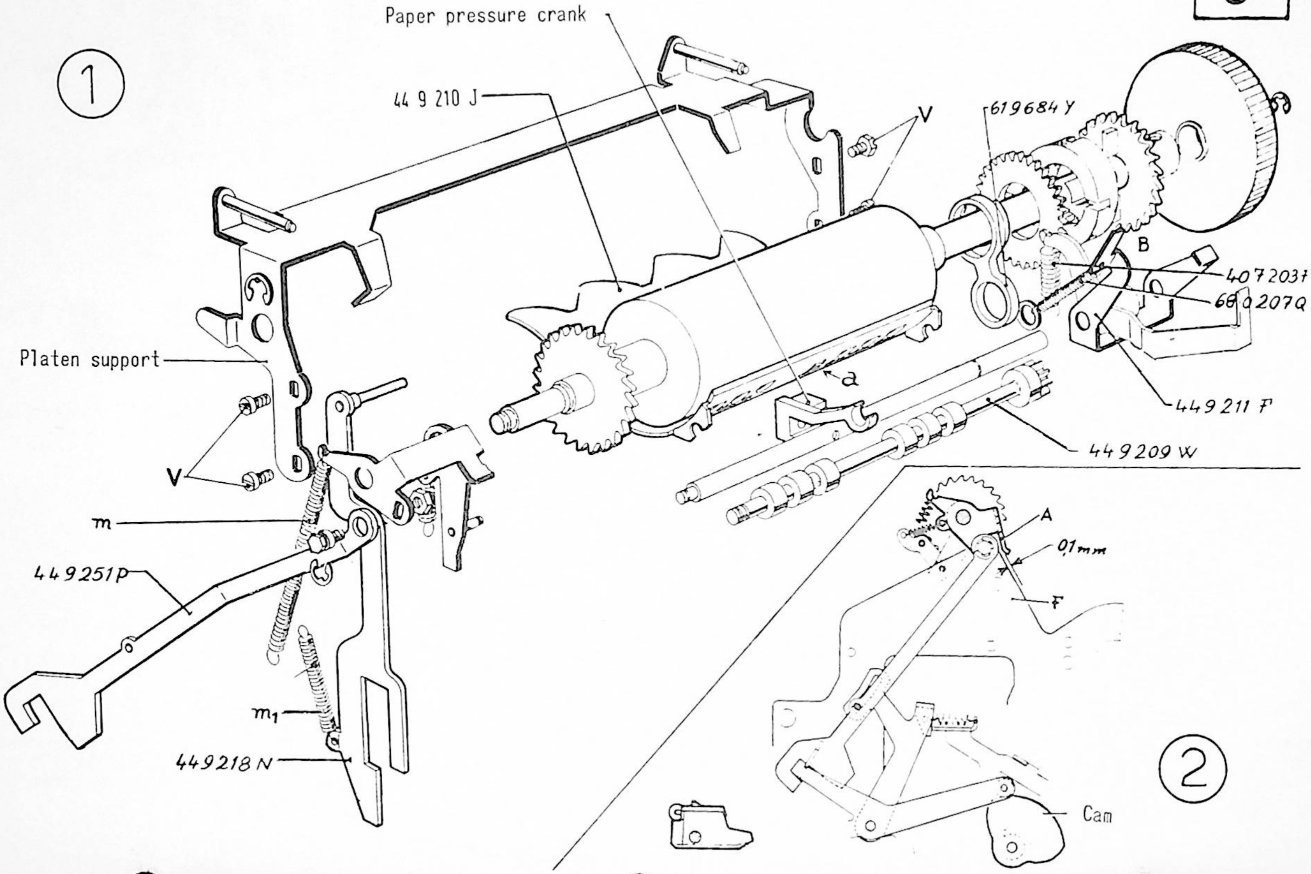
ASSEMBLY

WHAT TO DO

- Install paper pan C (fig. 1)
- Install the platen; fasten with retainer P and screws V (fig. 3)
- Mount the paper roll holder in manner that:
    - Slot F engages with side frame
    - Lever Q supports paper pan C

  (fig. 1)
- Tighten screws U and U1 (fig. 1)
- Insert stud of lever L into slot A (fig. 2)
- Hook spring M (fig. 3)

- Machine at rest - cord unplugged
- Depress OUT key and then N.A. key
- Manually activate precycle and verify that extension $\boxed{B}$ (fig 4) passes under wing A with a clearance of 0.2 to 0.4 mm (if necessary act on bridge 449221 H)


①
Paper pressure crank
44 9 210 J
V
619684 Y
B
407203 T
680207Q
Platen support
a
449211 F
449209 W
V
m
449251P
m₁
449218 N
A
0,1mm
F
②
Cam

MC26 - PLATEN AND PAPER ROLL HOLDER DISASSEMBLY

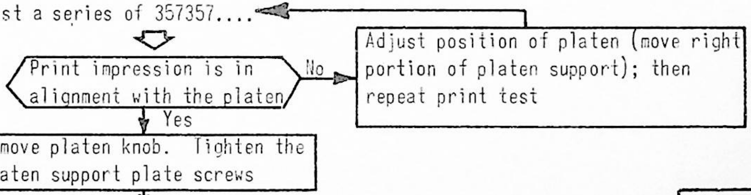
DISASSEMBLY

WHAT TO DO	HOW TO DO IT
- Remove the ribbon	
- Remove paper cutter	- Remove retainers and unhook spring - Remove by raising it in front and slightly rotating it counterclockwise
- Remove paper table	- Remove by raising it
- Remove platen	- Remove platen knob - Remove link 449251P by removing retainer S and unhooking spring m - Remove link 449218N unhooking spring M1 - Remove 4 screws V - Unhook springs 407203F and 680207Q from post - Flex arm B of bridge 449211F; then move the platen in order to remove the bushing 619684Y from the pinion - Remove unit
- Remove paper pan 449210J and shaft 449209W	

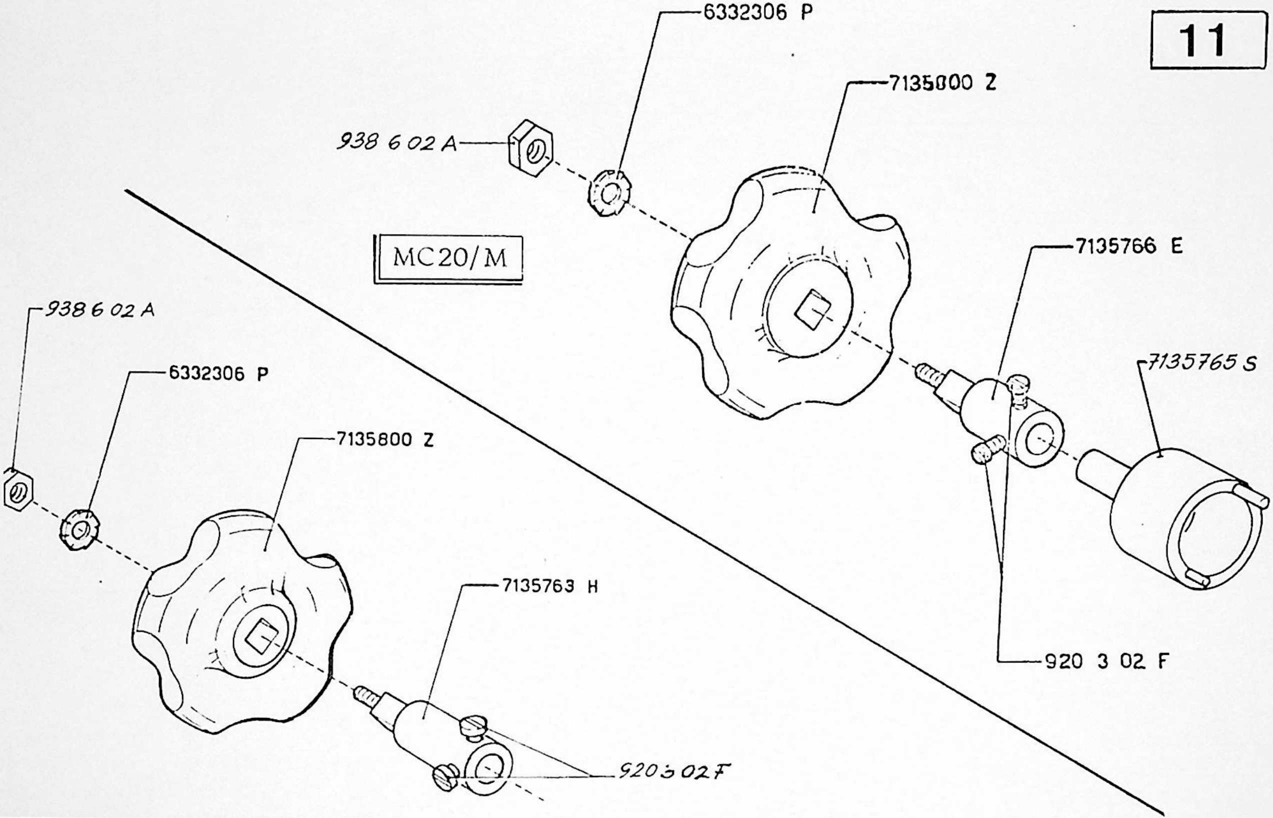
ASSEMBLY

WHAT TO DO	HOW TO DO IT
- Install paper pan and shaft 449209W	- Couple them and install them in manner that lip a is positioned under the tooth of paper pan arm
- Install paper cutter	- Install retainer but do not hook spring
- Install platen	- Hold it slightly inclined and insert the bushing on the pinion - Tighten screws V friction tight in middle slot - Install the remaining parts in reverse order of removal

- Install paper table
- Hook paper cutter spring
- Install ribbon
- Temporarily install the platen knob. Insert a piece of paper
- Machine at rest - cord unplugged
- Enter 1 and depress [#] key
- Rotate operating knob until cam is in position shown in Fig. 2
- Verify that wing A has a clearance of 0.1 mm with respect to sidewall F Obtain this condition by adjusting left side of platen support using screws V
- Plug in cord
- List a series of 357357....

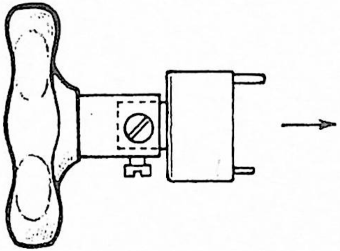

Print impression is in alignment with the platen
No
Adjust position of platen (move right portion of platen support); then repeat print test
Yes
Remove platen knob. Tighten the platen support plate screws

- Install platen knob (with longest hub toward the outside)

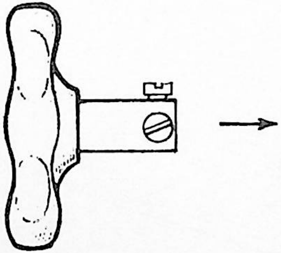

MC20/M

MC20/E - MC20/Q - MC23

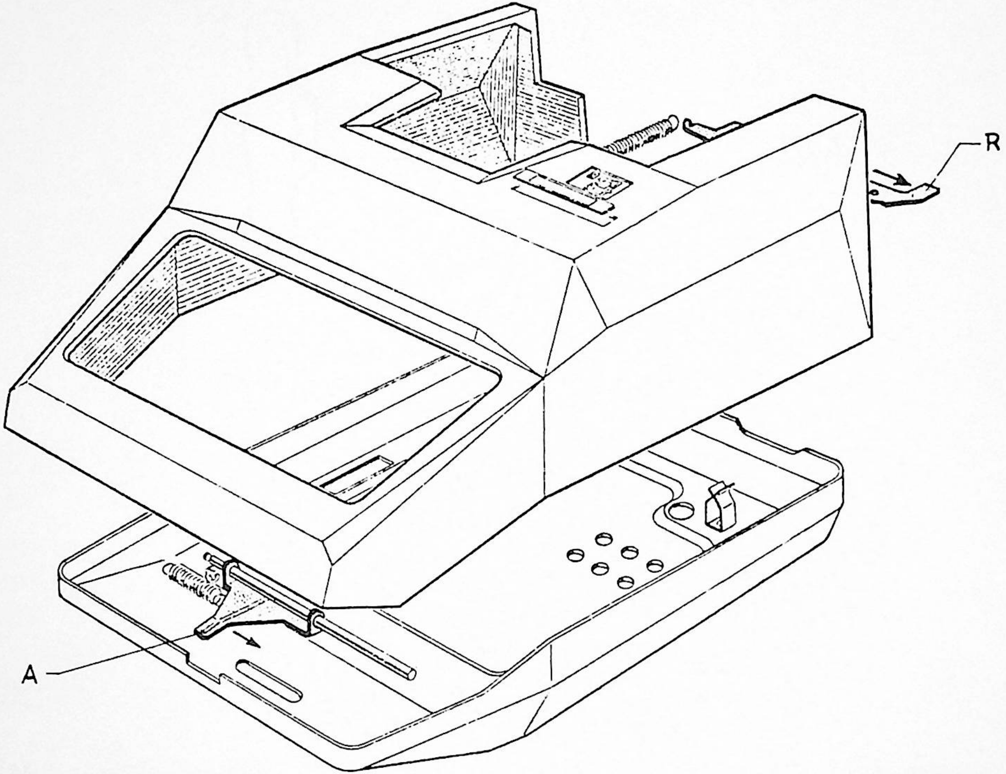
OPERATING KNOB FOR MC20/E - MC20/M - MC20/Q - MC23



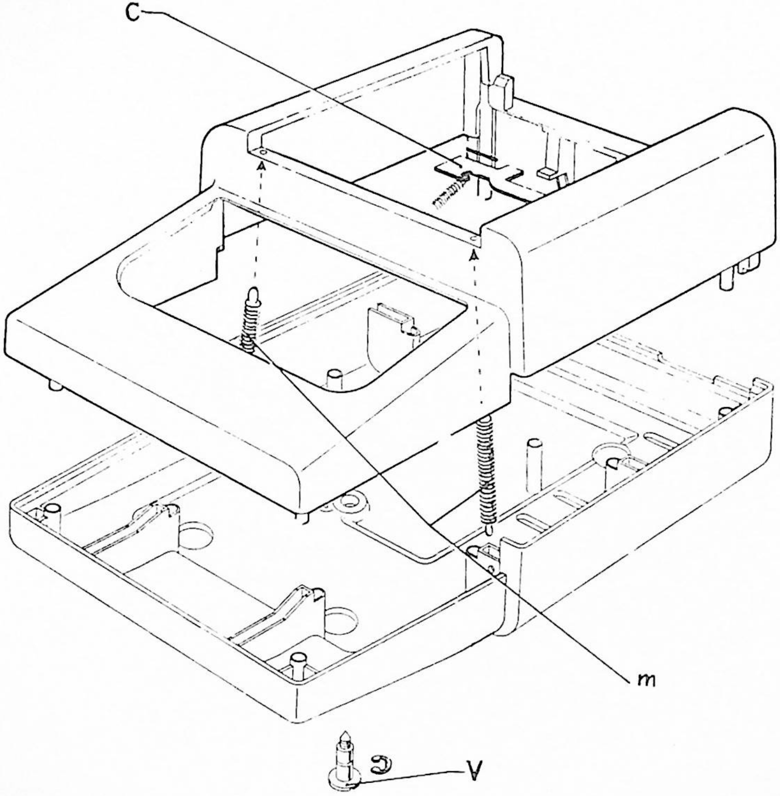
MC20/M



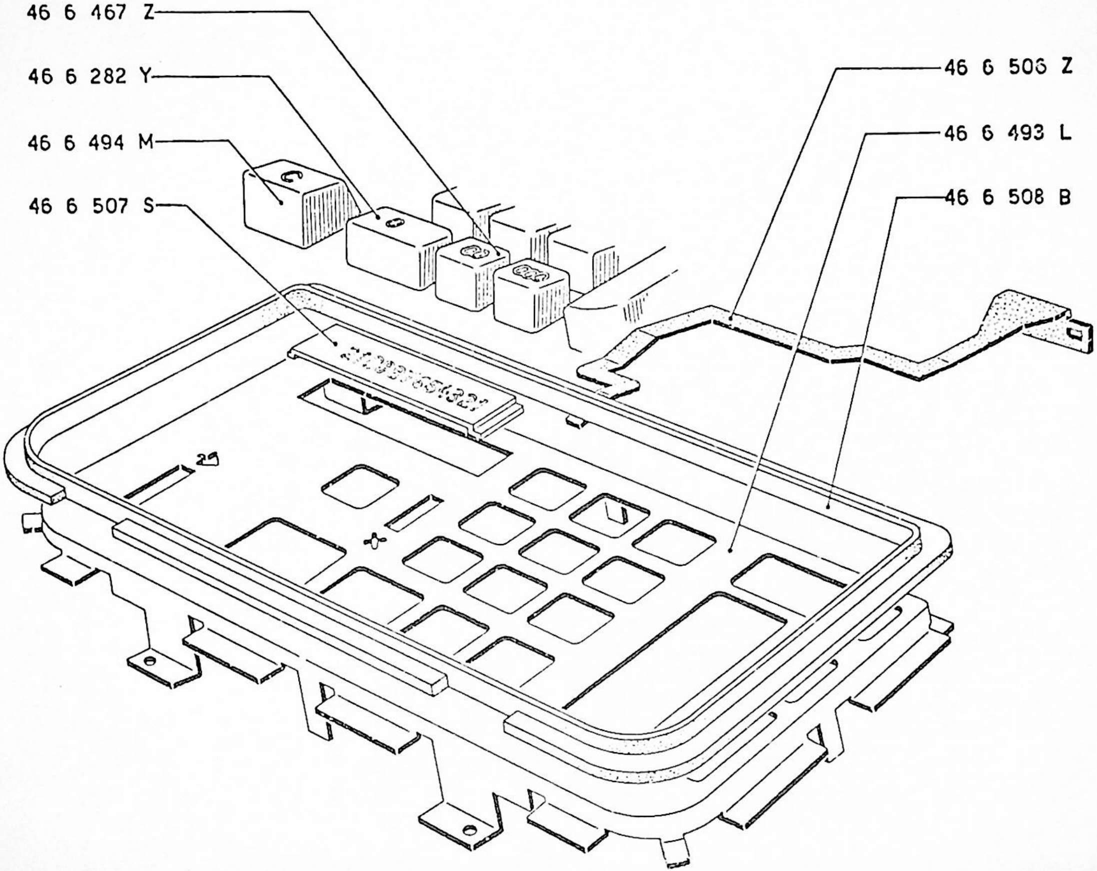
MC20/E - MC20/Q - MC23


R
A

MC20 CLASS	PRELIMINARY OPERATIONS
REMOVE CASING	- Remove cord - Remove paper roll - Move the latch plate R in the direction shown by arrow (fig. 1) (For the MC20/M move also the front latch A) - Raise upper cover (paper cutter) - Push casing towards the front to free it from latches (For the MC20/M raise it)
INSTALL OPERATING KNOB	- Install on main shaft, then tighten screws
REMOVE BOTTOM PAN	- Remove bottom pan

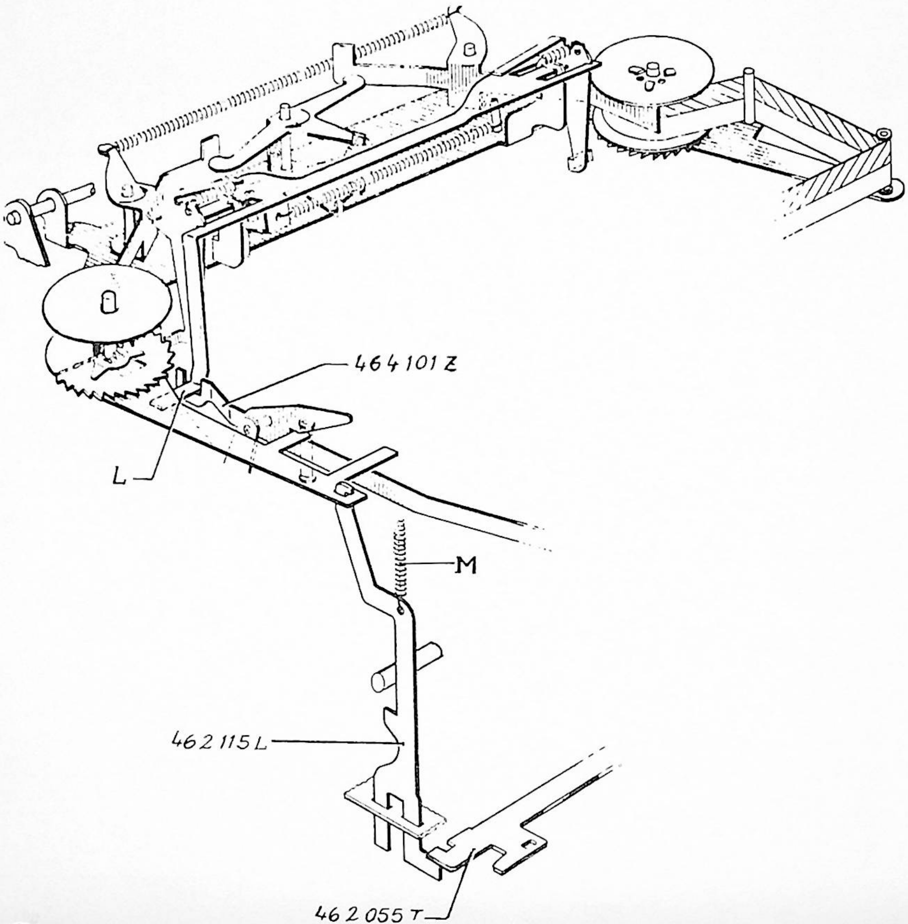

C
m
V

MC23 CLASS	PRELIMINARY OPERATIONS
REMOVE CASING	- Remove cord - Remove paper roll - Loosen screw V - For old style machines disconnct springs "m" - With screwdriver pry lower casing off - Move latch plate C, raise cover then push the casing towards the front to disengage
INSTALL OPERATING KNOB	- Install on main shaft, tighten set screws


46 6 467 Z
46 6 282 Y
46 6 494 M
46 6 507 S
46 6 506 Z
46 6 493 L
46 6 508 B
29

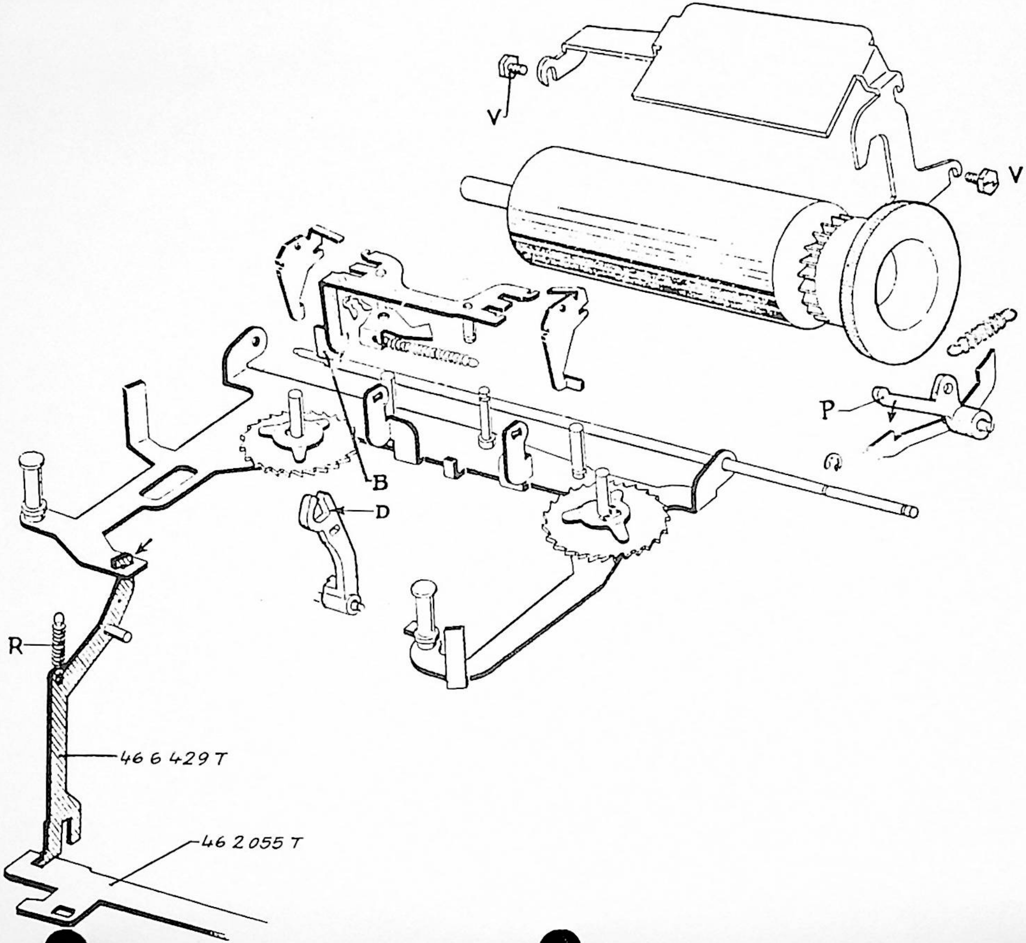
KEYBOARD MODIFICATION FOR THE $\boxed{00}$ KEY

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Modification of keyboard	- Remove casing - Remove keyboard cover plate - Remove keytops: $\boxed{C}$ $\boxed{0}$ $\boxed{00}$ - List full capacity; remove column indicator 466506Z and transparent 466507S	- Modification of keyboard	- Install the new indicator 466506Z - Install the new keytops: 466282Y - 466467Z - 466494M - Install the new keyboard top plate 466493L with transparent 466507S and gasket 466508B - Install casing


464101 Z
L
M
462115 L
462055 T

MC20 - RIBBON FEED-REVERSE UNIT DISASSEMBLY

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Disassembly of ribbon carrier frame	- Remove cover with paper cutter by removing bearing shaft - Unhook spring M, then remove the ribbon carrier frame	- Install the ribbon carrier frame	- Check that link 462115L is blocked by plate 462055T (released during a $\boxed{\text{T}}$ cycle) - Engage the ribbon carrier frame with slider 462115L - Insert wing L in the notch of link 464101Z - Fasten the ribbon carrier frame and cover with paper cover by means of the bearing shaft - Hook spring M


V
V
P
B
D
R
46 6 429 T
46 2 055 T

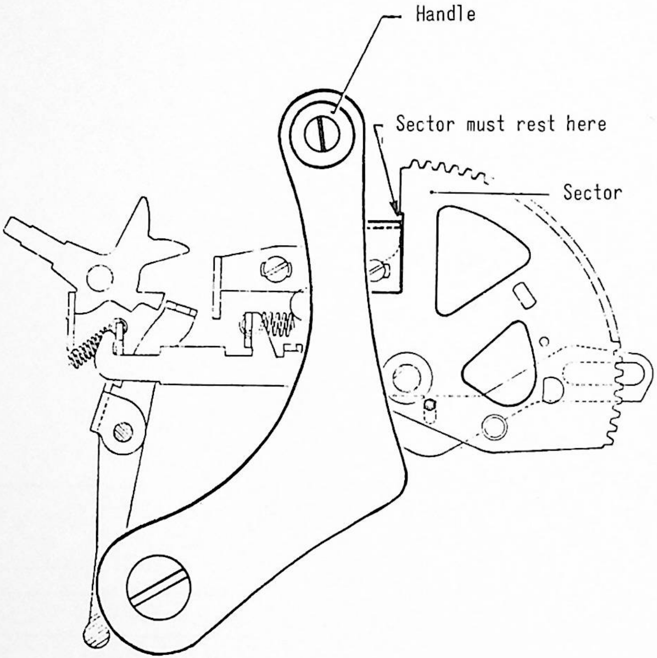
MC23 - PLATEN AND RIBBON CARRIER UNIT DISASSEMBLY

DISASSEMBLY		ASSEMBLY	
WHAT TO DO	HOW TO DO IT	WHAT TO DO	HOW TO DO IT
- Remove platen	- Loosen two screws V - Remove paper table and platen	- Install ribbon carrier unit	- Check that link 466429T is blocked by plate 462055T (released during a $\boxed{T}$ cycle) - Engage the ribbon carrier with link 466429T - Insert wing B in fork D - Fasten the ribbon carrier frame and top-cover with bearing shaft - Hook spring R
- Remove ribbon carrier unit	- Remove top-cover with paper cutter by removing bearing shaft - Unhook spring R - Remove unit	- Install platen	- Couple the paper table and platen. Rotate detent P in the direction shown by arrow. Install paper table and platen; tighten screws

MACHINE CONDITION - MC20 - MC23

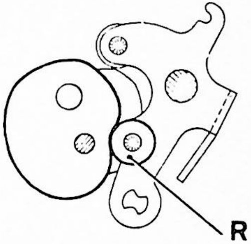
Summa Prima

OPERATING HANDLE REST POSITION



Handle is at rest when sector is as shown in figure

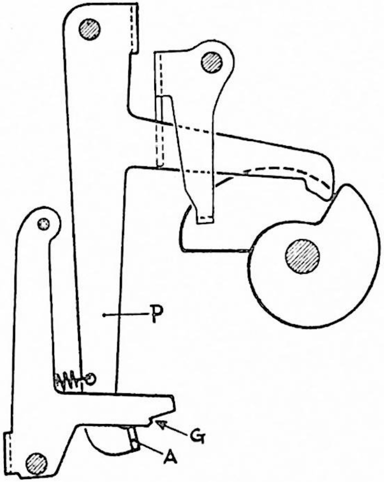
MAIN SHAFT REST POSITION



Main shaft is at rest if roller R and cam are as shown in figure

MACHINE CONDITION - MC24 - MC26

SERVOMECHANISM RELEASED



Servomechanism released if bridge P is in position shown in figure (with wing A disengaged from step G) and mainshaft at rest

TESTS

Presetting A R

GENERAL
TEST

MC 24

(1)

- Numeral entry
- Print, Line space and Symbols
- Clear and Backspace
- Date
- In and out memory

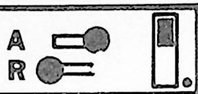
Step	Enter	Operation
1	Clear register	T
2	2	−
3	1	+D (═)
4		S
5		T
6	2	+D (═)
7	1	−
8		S
9	Check result	T
10	(Twelve 5's) 555555555555	+D (═)
11	(Twelve 4's) 444444444444	+D (═)
12		S
13		T
14	(Twelve 5's) 555555555555	−
15	(Twelve 4's) 444444444444	−
16		S
17	Check result	T
18	(Continued on next page)	

```
                                < T

                              2 < -
                              1 < +
                              1c< S

                              1c< T

                              2 < +
                              1 < -
                              1 < S

                              1 < T

5 5 5 5 5 5 5 5 5 5 5 5 < +
4 4 4 4 4 4 4 4 4 4 4 4 < +
9 9 9 9 9 9 9 9 9 9 9 9 < S

9 9 9 9 9 9 9 9 9 9 9 9 < T

5 5 5 5 5 5 5 5 5 5 5 5 < -
4 4 4 4 4 4 4 4 4 4 4 4 < -
9 9 9 9 9 9 9 9 9 9 9 9c< S

9 9 9 9 9 9 9 9 9 9 9 9c< T
```

MC 24

GENERAL
TEST

Presetting



Step	Enter	Operation
19	Depress date key	▤
20	(1 with eleven zeros) 100000000000	NA
21		→ NA
22		→ NA
23		→ NA
24		C NA
25		T
26	Check that repeat button has been returned to rest.	
27	Check result	
28	(Ten 1's) 1111111111	X
29		NA OUT
30		X
31		NA OUT

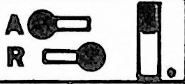
(continued from previous page)

```
9.70.  1 0 0 0 0 0 0 0 0 0 0 0 < <
         1 0 0 0 0 0 0 0 0 0 0 < <
           1 0 0 0 0 0 0 0 0 0 < <
             1 0 0 0 0 0 0 0 0 < <
                               < <
                               < T

   1 1 1 1 1 1 1 1 1 1 1 1 < < x
   1 1 1 1 1 1 1 1 1 1 1 1 < < x
                           < < x
                           < < x
```

MC 24

GENERAL
TEST

Presetting



Multiplication and TR

Step	Enter	Operation
1	Clear register	$\boxed{T}$
2	(99 with nine zeros) 99000000000	$\boxed{X}$
3	12	$\boxed{=}$
4	The machine must not perform the operation	
5		(NA)
6	1	$\boxed{=}$
7	1	⊜
8	Check result	
9	(99 with five zeros) 9900000	$\boxed{X}$
10	1	$\boxed{=}$
11	1	⊜
12	Check result	
13	90	$\boxed{X}$
14	1	$\boxed{=}$
15	1	⊜
16	Check result	
17	12	$\boxed{X}$
18	12	$\boxed{TR}$
19	12	$\boxed{=}$
20	Check result	

```
            < T

99000000000 < < x
         12 < <
          1   =
99000000000 < T

          1   x
99000000000 c< T

    9900000 < < x
          1   =
    9900000 < T

          1   x
    9900000 c< T

         90 < < x
          1   =
         90 < T

          1   x
         90 c< T

         12 < < x
         12   =
        144 < T x

         12   =
       1728 < T
```

(Division on next page)

Presetting A ●▭ R ▭● ▯

GENERAL
TEST

MC 24

(4)

Step	Enter	Operation
1	Clear register	T
2	(1 with eleven zeros) 100000000000	+D
3	(1 with eleven zeros) 100000000000	≑
4	Machine must not perform the operation	
5		(NA)
6	123	−
7	1	≑
8	Machine must not perform the operation	
9		(NA)
10	123	+D
11		≑
12	Machine must not perform the operation	
13		(NA)
14	(Twelve 1's) 111111111111	+D
15	9	≑
16	Check result	
17	(1 with eleven zero's) 100000000000	+D
18	1	≑
19	Check result	

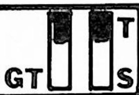
DIVISION

```
                              < T

  1 0 0 0 0 0 0 0 0 0 0 0 < +
  1 0 0 0 0 0 0 0 0 0 0 0 < S
  1 0 0 0 0 0 0 0 0 0 0 0 < <
  1 0 0 0 0 0 0 0 0 0 0 0 < T

                    1 2 3 < -
9 9 9 9 9 9 9 9 9 9 8 7 6 < :
  1 0 0 0 0 0 0 0 0 0 0 0 < :
                    1 2 3c< T

                    1 2 3 < +
                    1 2 3 < S
  9 0 0 0 0 0 0 0 0 0 0 0 < :
                    1 2 3 < T

  1 1 1 1 1 1 1 1 1 1 1 1 < +
  1 1 1 1 1 1 1 1 1 1 1 1 < :
                        9 < :
  → 1 2 3 4 5 6 7 9 0 1 2 < T
                      → 3 < T

1 0 0 0 0 0 0 0 0 0 0 0 < +
1 0 0 0 0 0 0 0 0 0 0 0 < :
                      1 < :
→1 0 0 0 0 0 0 0 0 0 0 0 < T
                      → < T
```

MC 26

GENERAL
TEST

Presetting



- Numeral entry
- Print, Line space and Symbols
- Clear and Backspace
- Date
- In and out memory

Step	Enter	Operation
1	Clear register	T
2	2	−
3	1	+ D
4		S
5		T
6	2	+ D
7	1	−
8		S
9	Check register	T
10	(Twelve 5's) 555555555555	+ D
11	(Twelve 4's) 444444444444	+ D
12		S
13		T
14	(Twelve 5's) 555555555555	−
15	(Twelve 4's) 444444444444	−
16		S
17	Check result	T
	(continued on page 2)	

```
                        < T

                      2 < -
                      1 < +
                      1 < S c

                      1 < T c

                      2 < +
                      1 < -
                      1 < S

                      1 < T

5 5 5 5 5 5 5 5 5 5 5 5 < +
4 4 4 4 4 4 4 4 4 4 4 4 < +
9 9 9 9 9 9 9 9 9 9 9 9 < S

9 9 9 9 9 9 9 9 9 9 9 9 < T

5 5 5 5 5 5 5 5 5 5 5 5 < -
4 4 4 4 4 4 4 4 4 4 4 4 < -
9 9 9 9 9 9 9 9 9 9 9 9 < S c

9 9 9 9 9 9 9 9 9 9 9 9 < T c
```

MC 26

GENERAL
TEST

(2)

Presetting GT T S

Step	Enter	Operation
18	Depress date key	⊟
19	(Twelve 4's) 444444444444	#
20		÷D
21		÷D
22	4	÷D
23		T
24		#
25	Check result	T
26	(Twelve 1's) 111111111111	X
27		÷RM
28		X
29		÷RM

(continued from previous page)

```
                                   < T

21-1  4 4 4 4 4 4 4 4 4 4 4 4 < <
      4 4 4 4 4 4 4 4 4 4 4 4 < +
      4 4 4 4 4 4 4 4 4 4 4 4 < +
                            4 < +
      8 8 8 8 8 8 8 8 8 8 9 2 < T

      8 8 8 8 8 8 8 8 8 8 9 2 < <
                              < T

                              < T
```

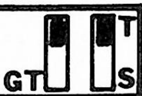
To test clear and backspace, enter a number of several digits, depress the backspace key and check operation of column indicator; then repeat procedure for clear key.

```
1 1 1 1 1 1 1 1 1 1 1 1  < < X
1 1 1 1 1 1 1 1 1 1 1 1  < < X
1 1 1 1 1 1 1 1 1 1 1 1  < < X
1 1 1 1 1 1 1 1 1 1 1 1  < < X
```

(Multiplication and TR on next page)

MC 26

Presetting



GENERAL
TEST

Step	Enter	Operation
1	Clear register	T
2	(99 with nine zeros) 99000000000	X
3	12	=
4	Machine must not perform the operation	
5		#
6	1	=
7	1	(=)
8	Check result	
9	(99 with five zeros) 9900000	X
10	1	=
11	1	(=)
12	Check result	
13	90	X
14	1	=
15	1	(=)
16	Check result	
17	12	(X^n) X
18		(X^n) (TR)
19		(X^n) =
20	Check result	

Multiplication and TR

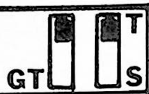
```
                          < T

 9 9 0 0 0 0 0 0 0 0 0 < < x
                   1 2 < <
                     1   =
 9 9 0 0 0 0 0 0 0 0 0 < T

                     1   x
 9 9 0 0 0 0 0 0 0 0 0 < T c

         9 9 0 0 0 0 0 < < x
                     1   =
         9 9 0 0 0 0 0 < T

                     1   x
         9 9 0 0 0 0 0 < T c

                   9 0 < < x
                     1   =
                   9 0 < T

                     1   x
                   9 0 < T c

                   1 2 < < x
                   1 2   =
                 1 4 4 < T x

                   1 2   =
               1 7 2 8 < T
```

(Division on next page)

MC 26

GENERAL TEST

Presetting



DIVISION

Step	Enter	Operation
1	Clear register	T
2	(1 with eleven zeros) 100000000000	÷D
3	(1 with eleven zeros) 100000000000	÷RM
4	The machine must not perform the operation	
5		#
6	123	−
7	1	÷RM
8	The machine must not perform the operation	
9		#
10	(Twelve 1's) 111111111111	÷D
11	9	÷RM
12	Check result	
13	(1 with eleven zeros) 100000000000	÷D
14	1	÷RM
15	Check result	

```
                         < T

     100000000000 < ÷
     100000000000 < S
     100000000000 < <
     100000000000 < T

              123 < −
    999999999876 < :
     100000000000 < :
              123 < T c

     111111111111 < ÷
     111111111111 < :
                9 < :
      12345679012 < T
                3 < T

     100000000000 < ÷
     100000000000 < :
                1 < :
     100000000000 < T
                  < T
```

MC 20

GENERAL
TEST

(1)

Presetting: Repeat at rest, Automatic at rest

Step	Enter	Operation
1	Clear register	T
2	1	+
3	Set repeat	
4	2	–
5		+
6		–
7	Check result	T
8	Set repeat	
9	123456789	[illegible]
10		C
11	12345679	+
12	0	–
13		–
14		+
15	Check result	S
16	Disengage repeat	
17	Check result	S
18	9000000000	+
19	1	+
20	Check result	T
	(for MC20/M continued on next page)	

- Numeral entry
- Print, Line space and Symbols
- Repeat and clear

```
                        T

                      1
                      2   -
                      2
                      2   -
                      1 T -

  1,234,567.89 <
    123,456.79
  1,234,567.90   -
  1,234,567.90   -
 12,345,679.00
  9,999,999.99 S

  9,999,999.99 S

 90,000,000.00
              1
100,000,000.00 T
```

GENERAL
TEST

MC 20/M

Presetting	Repeat at rest Automatic at rest	
Step	**Enter**	**Operation**
1	12345679	x
2	45	=
3	Set automatic	
4	12345679	x
5	36	=
6	Check result	
7	1	x
8	1	=
9	Check result	
10	1010101010	x
11	1	=
12	Check result	

(For MC20/M from previous page)

```
   1 2 3,4 5 6.7 9 ×
               4 5 =
   1 2 3,4 5 6.7 9 ×
               3 6 =
→ 9,9 9 9,9 9 9.9 9 T

                 1 ×
                 1 =
→                1 T

 1 0,1 0 1,0 1 0.1 0 ×
                 1 =
→1 0,1 0 1,0 1 0.1 0 T
```

MC 23

GENERAL
TEST

(1)

Presetting
-Repeat at rest

- Numeral entry
- Print, Line space and Symbols
- Repeat and clear

Step	Enter	Operation
1	Clear register	T
2	1	+
3	Set repeat	
4	2	−
5		+
6		−
7	Check result	T
8	Set repeat	
9	12345678900	#
10		C
11	1234567900	+
12	0	−
13		−
14	0	+
15	Check result	S
16	Disengage Repeat	
17	Check result	S
18	(9 with eleven zeros) 900000000000	+
19	.100	+
20	Check result	T

```
                        0 0 T

                          1
                          2   -
                          2
                          2   -
                        0 1 T -

  1 2 3,4 5 6,7 8 9.0 0 <
    1 2,3 4 5,6 7 9.0 0
  1 2 3,4 5 6,7 9 0.0 0   -
  1 2 3,4 5 6,7 9 0.0 0   -
1,2 3 4,5 6 7,9 0 0.0 0
  9 9 9,9 9 9,9 9 9.0 0 S

  9 9 9,9 9 9,9 9 9.0 0 S

9,0 0 0,0 0 0,0 0 0.0 0
                  1.0 0
1 0,0 0 0,0 0 0,0 0 0.0 0 T
```